

SURVEY NOTES-HIGH RESOLUTION DATA
GEO-445

Geosource Inc. Client-COCORP

DATE: 4/11/79	INSTRUMENT MAN: G. Cotcamp	ROD MAN: R. Hulsey	PARTY NUMBER: 6834	NOTES CHECKED BY: R. Hulsey	LINE NO.: 2	PAGE: 1 of 57
AREA: OKLAHOMA	TOPO MAP: Frederick 15	STATE: Oklahoma	COUNTY: Jackson	TWP: 2S	RANGE: 20W	PPM: L.O. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
TBM				9°54'						1215.5				386,595	1,624,221	instrument-TIA wild chainage - 330' cable and steel arrows.
	1700		170°31.5'+180°	+9.9°	+5.9	-		+5.9	1221.4		BS	+1700	+13			spike in corner fence post (gate)
	1700				+14.4	TH	8.5	+5.9			BS					
1	1650		170°30'	+9.9°	6.2	-		-6.2	1215.2			-1650	-12	386,645	1,624,222	dirt road
2	1320	M	" "	+9.9°	6.1	-		-6.1	1215.3			-1320	-9	386,975	1,624,225	
3	990		" "	+9.9°	7.2	-		-7.2	1214.2			-990	-7	387,305	1,624,227	v
4	660		" "	+9.9°	5.4	-		-5.4	1216.0			-660	-5	387,635	1,624,229	
5	330		" "	+9.9°	5.1	-		-5.1	1216.3			-330	-2	387,965	1,624,232	unlocked gate (4-5)
6	0				5.4	-		-5.4	1216.0		TP	0	0	388,295	1,624,234	
7	330		351° 0'	+9.9°	5.7	-		-5.7	1215.7			+330	+5	388,625	1,624,239	R-20% T-25%
8	660		" "	+9.9°	5.0	-		-5.0	1216.4			+660	+10	388,955	1,624,244	12
9	990		" "	+9.9°	5.0	-		-5.0	1216.4			+990	+16	389,285	1,624,250	↑
10	1320		" "	+9.9°	4.5	-		-4.5	1216.9			+1320	+21	389,615	1,624,255	⊙
11	1650		351° 0'	+9.9°	3.3	-		-3.3			TP	+1650	+26	389,945	1,624,260	13
11	1650				11.5	TH	8.3	-3.2		1218.2	TP					
	1650		171° 4.1'+180°	+9.9°	+7.5	BH	+8.3	+17.8	1236.0		BS	+1650	+28			
	1650				+14.8	90°06'	+2.9	+17.7			BS					Rh.
11	1465		171° 0'	+9.9°	9.1	BH	-7.3	-16.4	1219.6			-1465	-23	390,130	1,624,265	390,130+1,624,265(s) T-rd (east)
12	1320		170° 46.5'	+9.9°	9.3	BH	-6.6	-15.9	1220.1			-1320	-16	390,275	1,624,272	
13	990		" "	+9.9°	13.5	-		-13.5	1222.5			-990	-12	390,605	1,624,276	
14	660		" "	+9.9°	10.4	-		-10.4	1225.6			-660	-8	390,935	1,624,280	

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
4/1/79		G. Cotcamp		R. Hulsey		6834		R. Hulsey		2	2			
AREA		TOPO MAP		STATE		COUNTY		TWP	RANGE	PPM	PARTY MANAGER			
Oklahoma		Frederick 15'		Oklahoma		Jackson		23/15	20W		L.O. Davis			
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1236.0					
15	330		170° 46.5'	+9.9°	6.2	-		-6.2		1229.8		-330	-4	391,265 1,624,284
16	0				5.4	-		-5.4		1230.6	π	0	0	391,595 1,624,288
17	330		351° 27'	+9.9°	3.0	-		-3.0		1233.0		+330	+8	391,925 1,624,296
18	660		" "	+9.9°	1.4	-		-1.4		1234.6		+660	+16	392,255 1,624,304
19	990		" "	+9.9°	3.6	TH	+5.0	+1.4		1237.4		+990	+23	392,585 1,624,311
20	1200		350° 55.3'	+9.9°	6.4	89° 20'	+14.0	+7.6		1243.6		+1200	+17	392,795 1,624,305
20	1320		351° 27'	+9.9°	11.3	89° -	+23.0	+11.7		1247.7		+1320	+31	392,915 1,624,319
21	1650		351° 27'	+9.9°	1.0	89° -	+28.8	+27.8		1263.8	TP	+1650	+39.4	393,245 1,624,323
21	1650				5.9	88° 50'	+33.6	+27.7			TP			
	1980		170° 50.7' + 180°	+9.9°	+10.0	-		+10.0	1273.8		BS	+1980	+26.3	
	1980				+14.6	89° 52'	-4.6	+10.0			BS			
22	1650		170° 50.7'	+9.9°	12.4	-		-12.4		1261.4		-1650	-21	393,575 1,624,325
23	1320		" "	+9.9°	8.3	BH	-6.6	-14.9		1258.9		-1320	-17	393,905 1,624,329
24	990		" "	+9.9°	8.5	BH	-5.0	-13.5		1260.3		-990	-13	394,235 1,624,333
25	660		" "	+9.9°	8.8	-		-8.8		1265.0		-660	-9	394,565 1,624,337
26	330		" "	+9.9°	6.8	-		-6.8		1267.0		-330	-4	394,895 1,624,342
27	0				5.4	-		-5.4		1268.4	π	0	0	395,225 1,624,346
28	330		350° 53.2'	+9.9°	6.0	-		-6.0		1267.8		+330	+5	395,555 1,624,351
29	660		" "	+9.9°	6.4	-		-6.4		1267.4		+660	+9	395,885 1,624,355
30	990		" "	+9.9°	6.4	-		-6.4		1217.4		+990	+14	396,215 1,624,360

125
392,810 + 1,624,285 (s)
T-rd (west)
TIS
↓

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/1/79		G. Cotcamp		R. Hulsey		5834		R. Hulsey		2		3		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		
Oklahoma		Frederick 15'		Oklahoma		Jackson		1S		20W		PARTY MANAGER L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1273.8					
31	1320		350°53.2'	+9.9°	6.0	-		-6.0		12678		+1320	+18	396,545 1,624,364
32	1650		" "	+9.9°	5.3	-		-5.3		1268.5		+1650	+23	396,875 1,624,369
33	1980		350°53.2'	+9.9°	5.0	-		-5.0		1268.8	TP	+1980	+27-4	397,205 1,624,369
33	1980				14.9	TH	+9.9	-5.0			TP			
	2640		170°42'+180°	+9.9°	+9.1	-		+9.1			BS	+2640	+28-3	
	2640				+13.8	89°54'	-4.6	+9.2	1278.0		BS			
34	2310		170°42'	+9.9°	9.0	-		-9.0		1269.0		-2310	-24	397,535 1,624,370
35	1980		" "	+9.9°	8.9	-		-8.9		1269.1		-1980	-21	397,865 1,624,373
35	1745		170°44°	+9.9°	7.7	-		-7.7		1270.3		-1745	-19	398,100 1,624,375 398,115 1,624,360(s) T-rd (west) el. 1270
36	1650		170°42°	+9.9°	7.8	-		-7.8		1270.2		-1650	-17	398,195 1,624,377
37	1320		" "	+9.9°	7.5	-		-7.5		1270.5		-1320	-14	398,525 1,624,380
38	990		" "	+9.9°	7.0	-		-7.0		1271.0		-990	-10	398,855 1,624,384
39	660		" "	+9.9°	6.9	-		-6.9		1271.1		-660	-7	399,185 1,624,387
40	330		" "	+9.9°	6.1	-		-6.1		1271.9		-330	-3	399,515 1,624,391
41	0				5.4	-		-5.4		1272.6	π	0	0	399,845 1,624,394
42	330		350°53'	+9.9°	4.5	-		-4.5		1273.5		+330	+5	400,175 1,624,399
43	660		" "	+9.9°	3.9	-		-3.9		1274.1		+660	+9	400,505 1,624,403
44	990		" "	+9.9°	3.9	-		-3.9		1274.1		+990	+14	400,835 1,624,408
45	1320		" "	+9.9°	4.3	-		-4.3		1273.7		+1320	+18	401,165 1,624,412
46	1650		" "	+9.9°	4.7	-		-4.7		1272.3		+1650	+23	401,495 1,624,417

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/1/79		G. Cotcamp		R. Hulsey		6834		R. Hulsey		2		4			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Frederick 15'		Oklahoma		Jackson		1S		20W				L.O. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1278.0						
47	1980		350°53'	+9.9°	4.4	-		-4.4		1273.6		+1980	+27	401,825	1,624,421
48	2310		" "	+9.9°	3.9	-		-3.9		1274.1		+2310	+32	402,155	1,624,426
49	2640		350°53'	+9.9°	4.0	-		-4.0		1274.0	TP	+2640	+36-3	402,485	1,624,427
49	2640				14.8	89°46'	-10.7	-4.1			TP				
	2640		170°44'+180°	+9.9°	+5.0	-		+5.0	1279.1		BS	+2640	+29-3		
	2640				+14.4	89°48'	-9.2	+5.2	5.1		BS				
50	2310		170°44'	+9.9°	4.9	-		-4.9		1274.2		-2310	-26	402,815	1,624,427
51	1980		" "	+9.9°	4.9	-		-4.9		1274.2		-1980	-22	403,145	1,624,431
TP	1780		171°1'	+9.9°	4.1	-		-4.1		1275.0	-	-1780	-28	403,345	1,624,425
52	1650		170°44'	+9.9°	4.9	-		-4.9		1274.2		-1650	-18	403,475	1,624,435
53	1320		" "	+9.9°	5.2	-		-5.2		1273.9		-1320	-15	403,805	1,624,438
54	990		" "	+9.9°	5.8	-		-5.8		1273.3		-990	-11	404,135	1,624,442
55	660		" "	+9.9°	5.3	-		-5.3		1273.8		-660	-7	404,465	1,624,446
56	330		" "	+9.9°	5.0	-		-5.0		1274.1		-330	-4	404,795	1,624,449
57	0				5.4	-		-5.4		1273.7	TP	0	0	405,125	1,624,453
58	330		350°49.5'	+9.9°	4.7	-		-4.7		1274.4		+330	+4	405,455	1,624,457
59	660		" "	+9.9°	4.7	-		-4.7		1274.4		+660	+8	405,785	1,624,461
60	990		" "	+9.9°	5.0	-		-5.0		1274.1		+990	+13	406,115	1,624,466
61	1320		" "	+9.9°	5.7	-		-5.7		1273.4		+1320	+17	406,445	1,624,470
62	1650		" "	+9.9°	6.3	-		-6.3		1272.8		+1650	+21	406,775	1,624,474

y=+10'
x=0'
403,335+1,624,425(S)
4-Way Intersect.
Unable to locate B.M.
new road (east)

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DATE 4/1/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 5
AREA Oklahoma	TOPO MAP Frederick 15'	STATE Oklahoma	COUNTY Jackson	TWP 1S	RANGE 20W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1279.1					
63	1980		350°49.5'	+9.9°	7.1	-		-7.1		1272.0	TP	+1980-3	+25	407,102 1,624,478
63	1980				140	89°48'	+6.9	-7.1			TP			
	660		170°57'+180°	+9.9°	+2.7	-		+2.7	1274.7		BS	+660-3	+10	
	660				+6.0	TH	-3.3	+2.7			BS			
64	330		170°57'	+9.9°	4.0	-		-4.0		1270.7		-330	-5	407,429 1,624,483
65	0				5.4	-		-5.4		1269.3	X	0	0	407,759 1,624,488
66	330		351°11.8'	+9.9°	5.3	-		-5.3		1269.4		+330	+6	408,089 1,624,494
67	660		" "	+9.9°	4.3	-		-4.3		1270.4		+660	+13	408,419 1,624,501
≡≡	850		350°35'	+9.9°	4.0	-		-4.0			TP	+850-3	+7	408,606 1,624,495
≡≡	850				8.2	TH	+4.3	-3.9		1270.8	TP			
	1315		260°39.8'-180°	+9.9°	+2.5	-		+2.5	1273.3		BS	-13-1	+1315+2	2610'(stadia) offset east
	1315				+9.1	TH	-6.6	+2.5			BS			
X	0				9.7	-		-9.7		1263.6	X	0	0	408,592 1,625,812
≡≡	1295		81°7'	+9.9°	3.2	OH	-6.5	-9.7			TP	-23	+1295+3	408,569 1,627,110
≡≡	1295										TP			408,570+1,627,110(s)
														horizont. correction y=-10' x=-25'

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DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4-4-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		2	6					
AREA		TOPO MAP		STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Frederick 15		Oklahoma	Jackson	15	19W		L. O. Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS A TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES Y X		REMARKS
										1263.6	X					BS on 90° Bend
	1460		171° 1.0' +180°	+10.1°	5.3	-		+5.3	1268.9		BS	+1460	+28			
	1460				12.6	TH	-7.3	+5.3			BS					
68	1320		171° 1'	+10.1°	5.8	-		-5.8		1263.1		-1320	-26	408,709	1,627,112	
69	990		" "	+10.1°	5.7	-		-5.7		1263.2		-990	-19	409,039	1,627,119	
70	660		" "	+10.1°	5.8	-		-5.8		1263.1		-660	-13	409,369	1,627,125	
71	330		" "	+10.1°	5.4	-		-5.4		1263.5		-330	-6	409,699	1,627,132	
72	0				5.4	-		-5.4		1263.5	A	0	0	410,029	1,627,138	
73	330		350° 25.4'	+10.1°	5.2	-		-5.2		1263.7		+330	+3	410,359	1,627,141	
74	660		" "	+10.1°	5.0	-		-5.0		1263.9		+660	+6	410,689	1,627,144	
75	990		" "	+10.1°	4.5	-		-4.5		1264.4		+990	+9	411,019	1,627,147	
76	1320		350° 25.4'	+10.1°	4.8	-		-4.8			TP	+1320	+12	411,349	1,627,150	
76	1320				11.3	TH	+6.6	-4.7		1264.2	TP					
	1320		170° 30.0'	+10.1°	5.1	-		+5.1	1269.3		BS	+1320	+14			
	1320		+180°		11.7	TH	-6.6	+5.1			BS					
77	990		170° 30'	+10.1°	5.1	-		-5.1		1264.2		-990	-10	411,679	1,627,154	
78	660		" "	+10.1°	5.0	-		-5.0		1264.3		-660	-7	412,009	1,627,157	
79	330		" "	+10.1°	5.1	-		-5.1		1264.2		-330	-3	412,339	1,627,161	
80	0				5.4	-		-5.4		1263.9	A	0	0	412,669	1,627,164	
81	330		350° 29.3'	+10.1°	5.6	-		-5.6		1263.7		+330	+3	412,999	1,627,167	
82	660		" "	+10.1°	5.7	-		-5.7		1263.6		+660	+7	413,329	1,627,171	

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Geosource Inc.

DATE 4-4-79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 7
AREA Oklahoma	TOPO MAP Frederick 15	STATE Oklahoma	COUNTY Jackson	TWP 1S	RANGE 19W	PPM
			PARTY MANAGER L. O. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1269.3						
83	990		350° 29.3'	+10.1°	7.0	-		-7.0		1262.3		+990	+10	413,659 1,627,174	$\frac{1}{2} = 39'$
#	1160		350° 18'	+10.1°	6.3	-		-6.3		1263.0		+1160	+8	413,829 1,627,172	413,820 + 1,627,200 (6)
84	1320		350° 29.3'	+10.1°	10.1	-		-10.1	-10.2	1259.1	TP	+1320	+14	413,989 1,627,178	4-way el. 1265.0
84	1320				3.7	BH	-6.6	-10.3			TP				
	990		171° 4.2' + 180°	+10.2°	+0.5	TH	-5.0	-4.5	1254.6		BS	+990	+22		
	990				+1.2	89° 40'	-5.8	-4.6			BS				
85	660		171° 4.2'	+10.2°	2.1	TH	+3.3	+1.2		1255.8		-660	-15	414,319 1,627,185	
86	330		" "	+10.2°	1.6	-		-1.6		1253.0		-330	-7	414,649 1,627,193	
87	0				5.4	-		-5.4		1249.2	TP	0	0	414,979 1,627,200	
88	330		354° 21'	+10.2°	6.4	-		-6.4		1248.2		+329	+26	415,308 1,627,226	
89	660		" "	+10.2°	8.0	-		-8.0		1246.6		+658	+52	415,637 1,627,252	
90	985		351° 15.3'	+10.2°	13.4	TH	+4.9	-8.5		1246.1	TP	+985	+25	415,964 1,627,225	Slight Curve
90	985				14.2	89° 40'	+5.7	-8.5			TP				
	975		183° 22.4	+10.2°	+11.5	BH	+4.9	+16.4	1262.5		BS	+948	+229		Shooting thru series
	975		-180°		+13.5	90° 10'	+2.8	+16.3			BS				of small curves
91	660		183° 22.4	+10.2°	12.2	-		-12.2		1250.3		-642	-155	416,270 1,627,299	
92	330		173° 35'	+10.2°	6.3	-		-6.3		1256.2		-329	-22	416,583 1,627,432	
93	0				5.4	-		-5.4		1257.1	TP	0	0	416,912 1,627,454	
94	330		328° 36'	+10.2°	4.0	-		-4.0		1258.5		+308	-119	417,220 1,627,335	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4-4-79	INSTRUMENT MAN R. Hulsey		ROD MAN G. Cotcamp		PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey		LINE NO. 2	PAGE 8
AREA Oklahoma	TOPO MAP Frederick 15'	STATE Oklahoma	COUNTY Jackson	TWP 1S	RANGE 19W	PPM	PARTY MANAGER L. O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1262.5								
95	660		330° 49'	+10.2°	3.1	TH	+3.3	+0.2	1262.8		TP	+624	-215	417,536	1,627,239		
95	660				5.5	89°30'	+5.8	+0.3		TP							
	1320		170° 49.3' + 180°	+10.2°	+14.9	-		+14.9		1277.7		BS	+1320	+24			
	1320				+8.3	BH	+6.6	+14.9			BS						
96	990		170° 49.3'	+10.2°	11.1	-		-11.1	1266.6			-990	-18	417,866	1,627,245		
97	660		" "	+10.2°	9.4	-		-9.4	1268.3			-660	-12	418,196	1,627,251		
98	330		" "	+10.2°	7.5	-		-7.5	1270.2			-330	-6	418,526	1,627,257		
99	0				5.4	-		-5.4	1272.3		TP	0	0	418,856	1,627,263	y=0' x=-8'	
100	330																
#	269		349° 35.5'	+10.2°	4.0	-		-4.0	1273.7			+269	-1	419,125	1,627,262	4-way el. 1275	
100	330		350° 50.9'	+10.4°	3.7	-		-3.7	1274.0			+330	+7	419,186	1,627,270		
101	660		" "	+10.4°	2.0	-		-2.0	1275.7			+660	+14	419,516	1,627,277		
102	990		" "	+10.4°	6.1	TH	+5.0	-1.1	1276.6			+990	+22	419,846	1,627,285		
103	1320		350° 50.9'	+10.4°	11.9	89°30'	+11.5	-0.4	1277.3		TP	+1320	+29	420,176	1,627,292		
103	1320				13.5	89°26'	+13.1	-0.4				TP					
	990		170° 51.3'	+10.4°	+8.5	-		+8.5		1285.8		BS	+990	+22			
	990		+180°		+3.5	BH	+5.0	+8.5			BS						
104	660		170° 51.3'	+10.4°	7.7	-		-7.7	1278.1			-660	-14	420,506	1,627,300		
105	330		" "	+10.4°	6.7	-		-6.7	1279.1			-330	-7	420,836	1,627,307		
106	0				5.4	-		-5.4	1280.4		TP	0	0	421,166	1,627,314		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4-4-79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 9
AREA Oklahoma	TOPO MAP Frederick 15'	STATE Oklahoma	COUNTY Jackson	TWP 1S	RANGE 19W	PPM
				PARTY MANAGER L. O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1285.8					
107	330		350° 33.1	+10.9°	4.1	-		-4.1		1281.7		+330	+5	421,496 1,627,319
108	660		" "	+10.9°	3.0	-		-3.0		1282.8		+660	+11	421,826 1,627,325
109	990		350° 33.1'	+10.9°	1.8	-		-1.8		1284.0	TP	+990	+16	422,156 1,627,330
109	990				6.7	TH	+5.0	-1.7			TP			
	990		170° 38.0' +180°	+10.9°	+8.6	-		+8.6	1292.6		BS	+990	+18	
	990				+3.7	BH	+5.0	+8.7			BS			
110	660		170° 38'	+10.9°	7.1	-		-7.1		1285.5		-660	-12	422,486 1,627,336
111	330		" "	+10.9°	6.0	-		-6.0		1286.6		-330	-6	422,816 1,627,342
112	0				5.4	-		-5.4		1287.2	TP	0	0	423,146 1,627,348
113	330		350° 54'	+10.9°	4.1	-		-4.1		1288.5		+330	+7	423,476 1,627,355
114	660		" "	+10.9°	3.0	-		-3.0		1289.6		+660	+15	423,806 1,627,363
115	990		" "	+10.9°	2.1	-		-2.1		1290.5		+990	+22	424,136 1,627,370
BM	1260		352° 2'	+10.9°	6.4	TH	+6.3	-0.1		1292.5		+1259	+53	424,405 1,627,401 BM el. 1292.
TP	1241		350° 28.9'	+10.9°	2.6	-		-2.6		1290.0	TP	+1241	+19	424,375 1,627,360's T-intersect.
TP	1241				8.8	TH	+6.2	-2.6			TP			251' From sta. 115
	1490	1489	259° 56.4'	+10.9°	+8.0	88° 16'	-45.0	-37.0	1253.0		BS	-9	+1489.3	Line jogs to
	1490		-180°		+6.3	88° 20'	-43.3	-37.0			BS			the east. Traverse
TP	0	-			5.4	-		-5.4		1247.6	TP	0	0	424,378 1,628,855 to next segment
TP	1045		80° 0.8'	+10.9°	7.4	-		-7.4		1245.6	TP	-7 +5	+1045.3	T-intersect. $y = +1.8$
TP	1045				12.6	TH	+5.2	-7.4			TP			424,376 1,629,907 424,375 + 1,629,915

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/5/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 10
AREA Oklahoma	TOPO MAP Frederick 15/Tipton 7 1/2	STATE Oklahoma	COUNTY Jackson	TWP 15	RANGE 19W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS
												LAT.	DEP.	Y	X			
115										1245.6								
	1729		170° 38.6' + 180°	+10.4°	+7.1	-		+7.1			BS	+1729+5	+31	+2				
	1729				+14.2	89° 46'	-7.0	+7.2	1252.8		BS							
116	1650		170° 20.5'	+10.4°	7.7	-		-7.7		1245.1		-1650	-21		424,960	1,629,919	TIN	
117	1320		" "	" "	6.1	-		-6.1		1246.7		-1320	-17		424,790	1,629,923	↓	
118	990		" "	" "	4.5	-		-4.5		1248.3		-990	-13		425,120	1,629,927		
119	660		" "	" "	5.3	-		-5.3		1247.5		-660	-9		425,450	1,629,931		
120	330		" "	" "	5.3	-		-5.3		1247.5		-330	-4		425,780	1,629,936		
121	0				5.4	-		-5.4		1247.4	TP	0	0		426,110	1,629,940		
122	330		350° 15.2'	+10.4°	4.5	-		-4.5		1248.3		+330	+4		426,440	1,629,944	↑	
123	660		" "	" "	3.7	-		-3.7		1249.1		+660	+8		426,770	1,629,948	Frederick Quad.	
124	990		" "	" "	2.3	-		-2.3		1250.5		+990	+11		427,100	1,629,951	Tipton Quad.	
125	1320		" "	" "	1.8	-		-1.8		1251.0		+1320	+15		427,430	1,629,955	↓	
126	1650		350° 15.2'	+10.4°	1.4	-		-1.4		1251.4	TP	+1650+5	+19+3		427,765	1,629,962		
126	1650				9.7	TH	+8.3	-1.4			TP							
	2970		169° 57.8' + 180°	+10.4°	+8.5	-		+8.5			BS	+2970+5	+19	+2				
	2970				+13.7	89° 54'	-5.1	+8.6	1260.0		BS							
127	2640		169° 57.8'	+10.4°	8.3	-		-8.3		1251.7		-2640	-17		428,100	1,629,966		
128	2310		" "	" "	7.9	-		-7.9		1252.1		-2310	-15		428,430	1,629,968		
129	1980		" "	" "	7.9	-		-7.9		1252.1		-1980	-13		428,760	1,629,970		
130	1650		" "	" "	7.9	-		-7.9		1252.1		-1650	-10		429,090	1,629,972		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/5/79	INSTRUMENT MAN r. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6837	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 11
AREA Oklahoma	TOPO MAP Tipton	STATE Oklahoma	COUNTY Jackson	TWP 1N	RANGE 19W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1260.0						
X	1390		171°20.8'	+10.4°	4.5	-		-4.5		1255.5	✓	-1389	-42	429,351 1,629,941	chiseled square el. 1256.
JL TF	1350		170°10'	+10.4°	3.0	-		-3.0		1257.0	✓	-1350	-13	429,390 1,629,970	429,400 + 1,629,970 (s) 4-way Intersect.
131	1320		169°57.8'	+10.4°	3.6	-		-3.6		1256.4		-1320	-8	429,420 1,629,975	(Route 5) horizont. correct.
132	990		" "	" "	6.3	-		-6.3		1253.7		-990	-6	429,750 1,629,977	y = +20'
133	660		" "	" "	6.0	-		-6.0		1254.0		-660	-4	430,080 1,629,979	x = -13'
134	330		" "	" "	5.4	-		-5.4		1254.6		-330	-2	430,410 1,629,981	
135	0				5.4	-		-5.4		1254.6	X	0	0	430,740 1,629,983	
136	330		349°39'	+10.4°	4.2	-		-4.2		1255.8		+330	0	431,070 1,629,983	
137	660		" "	" "	3.1	-		-3.1		1256.9		+660	+1	431,400 1,629,984	
138	990		" "	" "	2.3	-		-2.3		1257.7		+990	+1	431,730 1,629,984	
139	1320		" "	" "	1.1	-		-1.1		1258.9		+1320	+1	432,060 1,629,984	
140	1650		" "	" "	7.2	TH	+8.3	+1.1		1261.1		+1650	+1	432,390 1,629,984	
141	1980		" "	" "	6.8	TH	+9.9	+3.1		1263.1		+1980	+2	432,720 1,629,985	
142	2310		" "	" "	5.2	TH	+11.6	+6.4		1266.4		+2310	+2	433,050 1,629,985	
143	2640		" "	" "	8.4	89°30'	+23.0	+14.6		1274.6		+2640	+2	433,380 1,629,985	
144	2970		349°39'	+10.4°	7.6	89°30'	+25.9	+18.3	+18.4	1278.4	TP	+2970	+3	433,710 1,629,986	✓
144	2970				14.3	89°22'	+32.8	+18.5			TP				
	2640		170°3.7'+180°	+10.4°	+13.2	-		+13.2	+1291.6		BS	+2640	+21		
	2640				+0.0	CH	+13.2	+13.2			BS				
145	2310		170°3.7'	+10.4°	5.8	BH	-11.6	-17.4		1274.2		-2310	-19	434,040 1,629,988	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.		PAGE		
4/5/79		G. Catcamp		R. Hulsey		6834		R. Hulsey			2		12		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Tipton		Oklahoma		Jackson		1N		19W				L.O. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1291.6						
146	1980		170° 3.7'	+10.4°	9.2	BH	-9.9	-19.1		1272.5		-1980	-16	434,370	1,629,991
148	1650		" "		11.6	BH									y = -5', x = -19'
148	1675		170° 29'	+10.4°	11.5	BH	-8.4	-19.9		1271.7		-1675	-26	434,675	1,629,981
X	1660		171° 21.3'	+10.4°	12.3	BH	-8.3	-20.6		1271.0		-1659	-51	434,691	1,629,956
147	1650		170° 3.7'	+10.4°	11.9	BH	-8.3	-20.2		1271.4		-1650	-13	434,700	1,629,994
148	1320		" "	+10.4°	13.2	BH	-6.6	-19.8		1271.8		-1320	-11	435,030	1,629,996
149	990		" "	+10.4°	12.0	BH	-5.0	-17.0		1274.6		-990	-8	435,360	1,629,999
150	660		" "	+10.4°	12.2	-		-12.2		1279.4		-660	-5	435,690	1,630,002
151	330		" "	+10.4°	7.7	-		-7.7		1283.9		-330	-3	436,020	1,630,004
152	0				5.4	-		-5.4		1286.2	π	0	0	436,350	1,630,007
153	330		350° 2.5'	+10.4°	3.7	-		-3.7		1287.9		+330	+3	436,680	1,630,010
154	660		" "	+10.4°	2.8	-		-2.8		1288.8		+660	+5	437,010	1,630,012
155	990		" "	+10.4°	1.6	-		-1.6		1290.0		+990	+8	437,340	1,630,015
156	1320		" "	+10.4°	5.7	TH	+6.6	+0.9		1292.5		+1320	+10	437,670	1,630,017
157	1650		" "	+10.4°	5.0	TH	+8.3	+3.3		1294.9		+1650	+13	438,000	1,630,020
158	1980		" "	+10.4°	5.1	TH	+9.9	+4.8		1296.4		+1980	+15	438,330	1,630,022
159	2310			+10.4°	4.9	TH	+11.6	+6.7		1298.3		+2310	+18	438,660	1,630,025
160	2640		350° 2.5'	+10.4°	4.7	TH	+13.2	+8.5		1300.1	TP	+2640	+20	438,990	1,630,027
160	2640				19.6	89° 30'	+23.0	+8.4			TP				

434,680 + 1,630,000 (S)
4-Way Intersect.

Chiseled □ el. 1272.0

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/5/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 5834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 13
AREA Oklahoma	TOPO MAP Tipton	STATE Oklahoma	COUNTY Jackson	TWP 1N	RANGE 19W	PPM
PARTY MANAGER L.O. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
160										1300.1						
	1980		169°50.6' +180°	+10.4°	+8.0	-		+8.0			BS	+1980	+8			
	1980				+15.0	89°48'	-6.9	+8.1	1308.2		BS					
161	1650		169°50.6'	+10.4°	7.1	-		-7.1		1301.1		-1650	-7	439,320	1,630,028	
BM	1360		168°55.6'	+10.4°	7.6	-		-7.6		1300.6		-1360	+16	439,610	1,630,051	U.S.G.S. el. 1302 BM "14 DAW 1962"
162	1320		169°50.6'	+10.4°	6.8	-		-6.8		1301.4		-1320	-6	439,650	1,630,029	(Line #1 notes)
162	1015		170°16.3'	+10.4°	5.7	-		-5.7		1302.5		-1015	-12	439,955	1,630,023	439,945 + 1,630,070 4-way int. Line #1 + 16
163	990		169°50.6'	+10.4°	6.0	-		-6.0		1302.2		-990	-4	439,980	1,630,031	y = +10' x = +17'
164	660		" "	+10.4°	4.9	-		-4.9		1303.3		-660	-3	440,310	1,630,032	
165	330		" "	+10.4°	4.7	-		-4.7		1303.5		-330	-1	440,640	1,630,034	
166	0				5.4	-		-5.4		1302.8	X	0	0	440,970	1,630,035	
167	330		349°34'	+10.4°	10.0	-		-10.0		1298.2		+330	0	441,300	1,630,035	
168	660		" "	+10.4°	10.2	91°	-11.5	-21.7		1286.5		+660	0	441,630	1,630,035	
169	990		" "	+10.4°	10.5	91°	-17.3	-27.8		1280.4		+990	-1	441,960	1,630,034	
170	1320		" "	+10.4°	6.9	91°	-23.0	-29.9		1278.3		+1320	-1	442,290	1,630,034	
171	1650		" "	+10.4°	3.7	91°	-28.8	-32.5		1275.7		+1650	-1	442,620	1,630,034	
172	1980		349°34'	+10.4°	10.3	90°40'	-23.0	-33.3			TP	+1980	-1	442,950	1,630,034	
172	1980				14.8	90°32'	-18.4	-33.2		1275.0	TP					
	2310		169°47.8' +180°	+10.4°	+11.7	-		+11.7			BS	+2310	+7			
	2310				+14.5	89°56'	-2.7	+11.8	1286.8		BS					
173	1980		169°47.8'	+10.4°	12.2	-		-12.2		1274.6		-1980	-7	443,280	1,630,034	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/5/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 14
AREA Oklahoma	TOPO MAP Tipton	STATE Oklahoma	COUNTY Jackson	TWP 1N	RANGE 19W	PPM
			PARTY MANAGER L.O. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1286.8					
174	1650		169° 47.8'		11.7	-		-11.7		1275.1		-1650	-6	443,610 1,630,035
175	1320		" "		12.4	-		-12.4		1274.4		-1320	-5	443,940 1,630,036
176	990		" "		11.4	-		-11.4		1275.4		-990	-3	444,270 1,630,038
177	660		" "		9.2	-		-9.2		1277.6		-660	-2	444,600 1,630,039
X	485		173° 16'		7.1	-		-7.1		1279.7		-484	-31	444,776 1,630,010
178	330		169° 47.8'		7.2	-		-7.2		1279.6		-330	-1	444,930 1,630,040
⊥	31		190° 45'		5.2	-		-5.2		1281.6		-29	-11	445,231 1,630,030
179	0				5.4	-		-5.4		1281.4	X	0	0	445,260 1,630,041
180	330		350° 49'		3.6	-		-3.6		1283.2		+330	+3	445,590 1,630,044
181	660		" "		3.2	-		-3.2		1283.6		+660	+6	445,920 1,630,047
182	990		" "		2.8	-		-2.8		1284.0		+990	+8	446,250 1,630,049
183	1320		" "		2.5	-		-2.5		1284.3		+1320	+11	446,580 1,630,052
184	1650		" "		2.1	-		-2.1		1284.7		+1650	+14	446,910 1,630,055
185	1980		" "		1.9	-		-1.9		1284.9		+1980	+17	447,240 1,630,058
186	2310		350° 49'		1.4	-		-1.4		1285.4	TP	+2310	+19	447,570 1,630,060
186	2310				13.0	TH	+11.6	-1.4			TP			
	1980		170° 27.3' + 180°		+5.9	-		+5.9			BS	+1980	+30	
	1980				+14.1	89° 46'	-8.1	+6.0	1291.4		BS			
187	1650		170° 27.3'		5.3	-		-5.3		1286.1		-1650	-25	447,900 1,630,065
188	1320		" "		5.8	-		-5.8		1285.6		-1320	-20	448,230 1,630,070

el. 1281
chiseled square
north side of railroad
445,215 + 1,630,050 (S)
4-Way Intersect.
x = +16'
x = +20'

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/5/79		G. Cotcamp		R. Hulsey		6834		R. Hulsey		2		15		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		
Oklahoma		Tipton		Oklahoma		Jackson		1N		19W		PARTY MANAGER L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1291.4					
189	990		170° 27.3'	+10.4°	5.7	-		-5.7		1285.7		-990	-15	448,560 1,630,075
190	660		" "	+10.4°	5.4	-		-5.4		1286.0		-660	-10	448,890 1,630,080
191	330		" "	+10.4°	5.1	-		-5.1		1286.3		-330	-5	449,220 1,630,085
192	0				5.4	-		-5.4		1286.0	π	0	0	449,550 1,630,090
193	330		350° 23.2'	+10.4°	4.6	-		-4.6		1286.8		+330	+5	449,880 1,630,095
194	660		" "	+10.4°	4.3	-		-4.3		1287.1		+660	+9	450,210 1,630,099
FF	955		349° 43.6'	+10.4°	3.6	-		-3.6		1287.8	-	+955	+2	450,505 1,630,092
X	980		350° 31'	+10.4°	3.8	-		-3.8		1287.6	/	+980	+16	450,530 1,630,106
195	990		350° 23.2'	+10.4°	3.6	-		-3.6		1287.8		+990	+14	450,540 1,630,104
196	1320		" "	+10.4°	3.7	-		-3.7		1287.7		+1320	+18	450,870 1,630,108
197	1650		" "	+10.4°	3.8	-		-3.8		1287.6		+1650	+23	451,200 1,630,113
198	1980		350° 23.2'	+10.4°	3.4	-		-3.4		1288.0	TP	+1980	+27	451,530 1,630,117
198	1980				13.3	TH	+9.9	-3.4			TP			
	1320		170° 41.3' + 180°	+10.4°	+3.7	-		+3.7	1291.7		BS	+1320	+25	
	1320		1		+10.3	TH	-6.6	+3.7			BS			
199	990		170° 41.3'	+10.4°	3.4	-		-3.4		1288.3		-990	-19	451,860 1,630,123
200	660		" "	+10.4°	3.1	-		-3.1		1288.6		-660	-13	452,190 1,630,129
201	330		" "	+10.4°	3.4	-		-3.4		1288.3		-330	-6	452,520 1,630,136
202	0				5.4	-		-5.4		1286.3	π	0	0	452,850 1,630,142
203	330		350° 33.6'	+10.4°	6.1	-		-6.1		1285.6		+330	+6	453,180 1,630,148

x = -8'
y = +5'
450,500 + 1,630,100 (s)
4-Way Intersect.
chiseled square el. 1288

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/5/79	INSTRUMENT MAN G. Catcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 16
AREA Oklahoma	TOPO MAP Tipton	STATE Oklahoma	COUNTY Jackson	TWP 1N	RANGE 19W	PPM
			PARTY MANAGER L.O. Davis			

STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1291.7					
204	660		350° 33.6'	+10.4°	6.8	-		-6.8		1284.9		+660	+11	453,510 1,630,153
205	990		" "	+10.4°	6.3	-		-6.3		1285.4		+990	+17	453,840 1,630,159
206	1320		350° 33.6'	+10.4°	6.3	-		-6.3		1285.4	TP	+1320	+22	454,170 1,630,164
206	1320				12.9	TH	+6.6	-4.3			TP			
	990		170° 35' + 180°	+10.4°	+5.3	-		+5.3	1290.7		BS	+990	+17	
	990				+10.2	TH	-5.0	+5.2			BS			
207	660		170° 35'	+10.4°	5.7	-		-5.7		1285.0		-660	-11	454,500 1,630,170
208	330		" "	+10.4°	5.7	-		-5.7		1285.0		-330	-6	454,830 1,630,175
209	0				5.4	-		-5.4		1285.3	X	0	0	455,160 1,630,181
210	330		350° 23'	+10.4°	4.7	-		-4.7		1286.0		+330	+5	455,490 1,630,186
TP	629		349° 22'	+10.4°	4.2	-		-4.2		1286.5		+629	-3	455,789 1,630,178
BM	646		347° 30'	+10.4°	3.8	-		-3.8		1286.9		+646	-24	455,806 1,630,157
211	660		350° 23'	+10.4°	4.2	-		-4.2		1286.5		+660	+9	455,820 1,630,190
212	990		350° 23'	+10.4°	4.7	-		-4.7		1286.0	TP	+990	+14	456,150 1,630,195
212	990				9.7	TH	+5.0	-4.7			TP			
	2640		169° 45.0' + 180°	+10.4°	+9.6	-		+9.6	1295.5	+9.5	BS	+2640	+7	
	2640				+7.9	90° 02'	+1.5	+9.4			BS			
213	2310		169° 45'	+10.4°	8.9	-		-8.9		1286.6		-2310	-6	456,480 1,630,196
214	1980		" "	" "	8.1	-		-8.1		1287.4		-1980	-5	456,810 1,630,197
215	1650		" "	" "	7.4	-		-7.4		1288.1		-1650	-4	457,140 1,630,198

455,780 + 1,630,175 (s)
4-Way Intersect.
U.S.G.S. 21-1288
"13 DAW, 1962"

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4-6-78	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 17
AREA Oklahoma	TOPO MAP Tipton	STATE Oklahoma	COUNTY Jackson	TWP. 12 N	RANGE 19 W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1295.5					
216	1320		169° 45.0'	+104°	7.0	-		-7.0		1288.5		-1320	-3	457,470 1,630,199
217	990		" "	" "	6.5	-		-6.5		1289.0		-990	-3	457,800 1,630,199
218	660		" "	" "	6.0	-		-6.0		1289.5		-660	-2	458,130 1,630,200
219	330		" "	" "	5.9	-		-5.9		1289.6		-330	-1	458,460 1,630,201
220	0				5.4	-		-5.4		1290.1	X	0	0	458,790 1,630,202
221	330		349° 47.9'	+104°	5.5	-		-5.5		1290.0		+330	+1	459,120 1,630,203
222	660		" "	" "	5.0	-		-5.0		1290.5		+660	+2	459,450 1,630,204
223	990		" "	" "	4.2	-		-4.2		1291.3		+990	+3	459,780 1,630,205
224	1320		" "	" "	3.3	-		-3.3		1292.2		+1320	+5	460,110 1,630,207
225	1650		" "	" "	2.7	-		-2.7		1292.8		+1650	+6	460,440 1,630,208 bridge
226	1980		" "	" "	3.1	-		-3.1		1292.4		+1980	+7	460,770 1,630,209
227	2310													TIN
IF	2295		349° 31'	+104°	2.4	-		-2.4		1293.1	/	+2295	-3	461,085 1,630,199 4-Way Intersect.
□	2310		350° 6'	+104°	13.9	TH	+11.6	-2.3		1293.2	/	+2310	+20	461,100 1,630,222 chiseled square 1294.
227	2310		349° 47.9'	+104°	2.4	-		-2.4		1293.1		+2310	+8	461,100 1,630,210 T 2 N
228	2640		349° 47.9'	+104°	10.7	89° 50'	+7.7	-3.0	-3.1	1292.4	TP	+2640	+9	461,430 1,630,211 ↓
228	2640				13.9	89° 46'	+10.7	-3.2			TP			
	2640		170° 2.1 +180°	+104°	+7.4	-		+7.4	1299.7	+7.3	BS	+2640	+20	
	2640				+5.7	90° 02'	+1.5	+7.2			BS			
229	2310		170° 2.1'	+104°	7.4	-		-7.4		1292.3		-2310	-18	461,170 1,630,212

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4-6-79	INSTRUMENT MAN R. Hulsey		ROD MAN G. Cotcamp		PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey		LINE NO. 2	PAGE 18
AREA Oklahoma	TOPO MAP Tipton 7.5'	STATE Oklahoma	COUNTY Jackson	TWP 2 N	RANGE 19 W	PPM	PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1299.7					
230	1980		170° 2.1'	+10.4°	7.4	-		-7.4		1292.3		-1980	-15	462,090 1,630,216
231	1650		" "	" "	7.1	-		-7.1		1292.6		-1650	-13	462,420 1,630,218
232	1320		" "	" "	6.9	-		-6.9		1292.8		-1320	-10	462,750 1,630,221
233	990		" "	" "	6.8	-		-6.8		1292.9		-990	-8	463,080 1,630,223
234	660		" "	" "	6.3	-		-6.3		1293.4		-660	-5	463,410 1,630,226
235	330		" "	" "	6.0	-		-6.0		1293.7		-330	-3	463,740 1,630,228
236	0				5.4	-		-5.4		1294.3	TP	0	0	464,070 1,630,231
237	330		349° 54.7'	+10.4°	4.9	-		-4.9		1294.8		+330	+2	464,400 1,630,233
238	660		" "	" "	3.7	-		-3.7		1296.0		+660	+4	464,730 1,630,235
239	990		" "	" "	2.4	-		-2.4		1297.3		+990	+5	465,060 1,630,236
240	1320		" "	" "	0.1	-		-0.1		1299.6		+1320	+7	465,390 1,630,238
241	1650		" "	" "	6.7	TH	+8.3	+1.6		1301.3		+1650	+9	465,720 1,630,240
242	1980		" "	" "	7.0	TH	+9.9	+2.9		1302.6		+1980	+11	466,050 1,630,242
243	2310													466,355 1,630,235(s)
≠	2290		349° 41'	+10.4°	6.8	TH	+11.5	+4.7		1304.4		+2290	+3	466,360 1,630,234 4-Way Intersect.
□	2300		349° 13	+10.4°	7.0	TH	+11.5	+4.5		1304.2		+2300	-15	466,370 1,630,216 chiseled square 1305.
243	2310		349° 54.7'	+10.4°	6.8	TH	+11.6	+4.8		1304.5		+2310	+13	466,380 1,630,244
244	2640		349° 54.7'	+10.5°	10.2	TH	+13.2	+3.0	+2.9	1302.6	TP	+2640	+19	466,708 1,630,250
244	2640				5.0	89°50'	+7.7	+2.7			TP			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4-6-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		2		19				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Oklahoma		Tipton 7.5'		Oklahoma		Jackson		2 N		19 W				L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
									1	1302.6						
244	2640		169° 35.1'	+180° +10.5°	+4.1	—		+4.1	1306.7		BS	+2640-3	+4+2			
	2640				+2.6	90°02'	+1.5	+4.1			BS					
245	2310		169° 35.1'	+10.5°	5.3	—		-5.3		1301.4		-2310	-3	467,035	1,630,253	
246	1980		" "	" "	5.2	—		-5.2		1301.5		-1980	-3	467,365	1,630,253	
247	1650		" "	" "	5.3	—		-5.3		1301.4		-1650	-2	467,695	1,630,254	
248	1320		" "	" "	5.8	—		-5.8		1300.9		-1320	-2	468,025	1,630,254	
249	990		" "	" "	6.1	—		-6.1		1300.6		-990	-1	468,355	1,630,255	
250	660		" "	" "	6.6	—		-6.6		1300.1		-660	-1	468,685	1,630,255	
251	330		" "	" "	5.8	—		-5.8		1300.9		-330	0	469,015	1,630,256	
252	0				5.5	—		-5.5		1301.2	π	0	0	469,345	1,630,256	
253	330		349° 34.9'	+10.5°	4.2	—		-4.2		1302.5		+330	0	469,675	1,630,256	
254	660		" "	" "	2.3	—		-2.3		1304.4		+660	+1	470,005	1,630,257	
255	990		" "	" "	0.2	—		-0.2		1306.5		+990	+1	470,335	1,630,257	
256	1320		" "	" "	3.9	TH	+6.6	+2.7		1309.4		+1320	+2	470,665	1,630,258	
257	1650		" "	" "	3.0	TH	+8.3	+5.3		1312.0		+1650	+2	470,995	1,630,258	
258	1980		" "	" "	3.0	TH	+9.9	+6.9		1313.6		+1980	+3	471,325	1,630,259	
259	2310		" "	" "	6.6	TH	+11.6	+5.0		1311.7		+2310	+3	471,655	1,630,259	471,665 + 1,630,260(s)
4 1/2	2325		349° 17'	+10.5°	6.7	TH	+11.6	+4.9		1311.6		+2325	-9	471,670	1,630,247	4-Way Intersect.
□	2340		349° 50'	+10.5°	7.3	TH	+11.7	+4.4		1311.1		+2340	+14	471,685	1,630,270	chiseled square 1312

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4-6-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		2		20				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Oklahoma		Headrick 7.5'		Oklahoma		Jackson		2N		19 W				L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS		
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y	X
259									1306.7						↑	
260	2640		349° 34.9'	+10.5°	10.9	74	+13.2	+2.3		1309.0	TP	+2640-2	+4+3	471,983	1,630,263	Tipton Quad.
260	2640				13.1	89°40'	+15.4	+2.3			TP					
	2310		170° 5.1'+180°	+10.5°	+14.2	-		+14.2	1323.2		BS	+2310-3	+24+3			
	2310				+2.7	BH	+11.6	+14.3			BS					
261	1980		170° 5.1'	+10.5°	5.5	BH	-9.9	-15.4		1307.8		-1980	-20	472,310	1,630,270	Headrick Quad.
262	1650		" "	"	6.4	BH	-8.3	-14.7		1308.5		-1650	-17	472,640	1,630,273	↓
263	1320		" "	"	7.2	BH	-6.6	-13.8		1309.4		-1320	-13	472,970	1,630,277	
264	990		" "	"	9.0	BH	-5.0	-14.0		1309.2		-990	-10	473,300	1,630,280	
265	660		" "	"	13.2	BH	-3.3	-16.5		1306.7		-660	-7	473,630	1,630,283	
266	330		" "	"	11.8	BH	-1.7	-13.5		1309.7		-330	-3	473,960	1,630,287	
267	0				5.4	-		-5.4		1317.8	TP	0	0	474,290	1,630,290	
##	101		343° 28'	+10.5°	4.3	-		-4.3		1318.9		+100	-11	474,390	1,630,279	railroad
268	330		350° 3.2'	+10.5°	8.9	-		-8.9		1314.3		+330	+3	474,620	1,630,293	
□	390		350° 24'	+10.5°	9.7	-		-9.7		1313.5		+390	+5	474,680	1,630,295	chiseled square 1315.
269	660		350° 3.2'	+10.5°	11.3	-		-11.3		1311.9		+660	+6	474,950	1,630,296	
270	990		" "	"	11.9	-		-11.9		1311.3		+990	+10	475,280	1,630,300	
271	1320		" "	"	11.9	-		-11.9		1311.3		+1320	+13	475,610	1,630,303	
272	1650		" "	"	11.2	-		-11.2		1312.0		+1650	+16	475,940	1,630,306	
273	1980		" "	"	10.0	-		-10.0		1313.2		+1980	+19	476,270	1,630,309	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN			ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.		PAGE	
4-5-79		R. Hulsey			G. Cotcamp		6834		R. Hulsey			2		21	
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Klahaoma		Headrick 7.5'		Oklahoma		Jackson		2 N		19 W				L.O. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1323.2						
274	2310		350° 3.2'	+10.5°	7.6	-	-7.6				TP	+2310	+22+3	476,600	1,630,315
274	2310				6.2	90° 02'	-1.3	-7.5		1315.7	TP				
	1980		170° 15.1' + 180°	+10.5°	+13.7	-	+13.7				BS	+1980	+26+3		
	1980				+3.9	BH	+9.9	+13.8	1329.5		BS				Horizontal correct. y=-16' x=+14'
275	1650		170° 15.1'	+10.5°	11.2	-	-11.2		1318.3			-1650	-22	476,930	1,630,322
TF	1620		170° 32'	+10.5°	10.9	-	-10.9		1318.6			-1620	-29	476,960	1,630,315
276	1320		170° 15.1'	+10.5°	9.2	-	-9.2		1320.3			-1320	-17	477,260	1,630,327
277	990		" "	"	7.4	-	-7.4		1322.1			-990	-13	477,590	1,630,331
278	660		" "	"	6.7	-	-6.7		1322.8			-660	-9	477,920	1,630,335
279	330		" "	"	6.4	-	-6.4		1323.1			-330	-4	478,250	1,630,340
280	0				5.4	-	-5.4		1324.1		T	0	0	478,580	1,630,344
281	330		350° 10.4'	+10.5°	3.9	-	-3.9		1325.6			+330	+4	478,910	1,630,348
282	660		" "	"	1.3	-	-1.3		1328.2			+660	+8	479,240	1,630,352
283	990		" "	"	0.0	-	-0.0		1329.5			+990	+12	479,570	1,630,356
284	1320		" "	"	4.1	TH	+6.6	+2.5	1332.0			+1320	+16	479,900	1,630,360
285	1650		" "	"	3.9	TH	+8.3	+4.4	1333.9			+1650	+19	480,230	1,630,363
286	1980		350° 10.4'	+10.8°	4.0	TH	+9.9	+5.9			TP	+1980.3	+34	480,557	1,630,378
286	1980				5.5	89° 40'	+11.5	+6.0	1335.5		TP				
	2970		169° 44.7' + 180°	+10.8°	+13.6	90° 02'	+1.7	+15.3			BS	+2970.3	+28		
	2970				+12.0	90° 04'	+3.4	+15.4	1350.9		BS				

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/6/79		G. Cotcamp		R. Hulsey		6834		R. Hulsey		2		22		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PARTY MANAGER		
Oklahoma		Headrick		Oklahoma		Jackson		2 N		19 W		L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1350.9					
287	2640		169° 44.7'	+10.8°	13.0	-		-13.0		1337.9		-2640	-25	480,884 1,630,381
288	2310		" "	" "	10.8	-		-10.8		1340.1		-2310	-22	481,214 1,630,384
289	1980		" "	" "	9.5	-		-9.5		1341.4		-1980	-19	481,544 1,630,387
290	1650		" "	" "	8.9	-		-8.9		1342.0		-1650	-16	481,874 1,630,390
291	1320		" "	" "	8.0	-		-8.0		1342.9		-1320	-13	482,204 1,630,393
291	1288		170° 13'	+10.8°	8.0	-		-8.0		1342.9		-1288	-23	482,236 1,630,383 4-Way Intersect. El. 1344
292	990		169° 44.7'	+10.8°	7.8	-		-7.8		1343.1		-990	-9	482,534 1,630,397
293	660		" "	" "	7.1	-		-7.1		1343.8		-660	-6	482,864 1,630,400
294	330		" "	" "	6.2	-		-6.2		1344.7		-330	-3	483,194 1,630,403
295	0		" "	" "	5.4	-		-5.4		1345.5	X	0	0	483,524 1,630,406
296	330		349° 42.6'	+10.8°	4.0	-		-4.0		1346.9		+330	+3	483,854 1,630,409
297	660		" "	" "	2.9	-		-2.9		1348.0		+660	+6	484,184 1,630,412
298	990		" "	" "	1.4	-		-1.4		1349.5		+990	+9	484,514 1,630,415
299	1320		" "	" "	6.7	TH	+6.6	-0.1		1350.8		+1320	+2	484,844 1,630,418
300	1650		" "	" "	7.0	TH	+8.3	+1.3		1352.2		+1650	+15	485,174 1,630,421
301	1980		" "	" "	7.7	TH	+9.9	+2.2		1353.1		+1980	+18	485,504 1,630,424
302	2310		" "	" "	8.5	TH	+11.6	+3.1		1354.0		+2310	+21	485,834 1,630,427
303	2640		" "	" "	9.5	TH	+13.2	+3.7		1354.6		+2640	+24	486,164 1,630,430
304	2970		349° 42.6'	+10.9°	10.0	TH	+14.9	+4.9		1355.8	TP	+2970	+32	486,494 1,630,438
304	2970		" "	" "	14.1	89° 38'	+19.0	+4.9			TP			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/6/79	INSTRUMENT MAN G. Cotcamp		ROD MAN R. Hulsey		PARTY NUMBER 6834		NOTES CHECKED BY R. Hulsey			LINE NO. 2	PAGE 23
AREA Oklahoma	TOPO MAP Headrick		STATE Oklahoma	COUNTY Jackson		TWP 2 N	RANGE 19 W	PPM		PARTY MANAGER L.O. Davis	

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
304										1355.8						
	2970		171°30' + 180°	+10.8°	+11.4	-		+11.4			BS	+2968.3	+119			
	2970				+15.0	89°56'	-3.4	+11.6	1367.4		BS					
305	2640		171°39'	+10.8°	10.3	-		-10.3		1357.1		-2638	-113	486,818	1,630,444	
306	2310		171°47'	+10.8°	9.6	-		-9.6		1357.8		-2308	-104	487,148	1,630,453	
307	1980		172°7'	+10.8°	8.8	-		-8.8		1358.6		-1977	-101	487,479	1,630,456	
307	1940		172°21.6'	+10.7°	8.7	-		-8.7		1358.7		-1937	-104	487,519	1,630,453	4-Way Intersect. E:135
308	1650		172°7'	+10.7°	8.6	-		-8.6		1358.8		-1648	-81	487,808	1,630,476	
309	1320		" "	"	7.9	-		-7.9		1359.5		-1318	-65	488,138	1,630,492	
310	990		" "	"	6.7	-		-6.7		1360.7		-989	-49	488,467	1,630,508	
311	660		" "	"	5.0	-		-5.0		1362.4		-659	-32	488,797	1,630,525	
312	330		" "	"	4.8	-		-4.8		1362.6		-330	-16	489,126	1,630,541	
313	0				5.4	-		-5.4		1362.0	π	0	0	489,456	1,630,557	
314	330		352° 1.2'	+10.7°	5.4	-		-5.4		1362.0		+330	+16	489,786	1,630,573	
315	660		" "	"	4.7	-		-4.7		1362.7		+659	+31	490,115	1,630,588	
316	990		" "	"	3.9	-		-3.9		1363.5		+989	+47	490,445	1,630,604	
317	1320		" "	"	3.2	-		-3.2		1364.2		+1319	+63	490,775	1,630,620	
318	1650		" "	"	2.8	-		-2.8		1364.6		+1648	+78	491,104	1,630,635	
319	1980		" "	"	2.4	-		-2.4		1365.0		+1978	+94	491,434	1,630,651	
326	2310		" "	"	2.0	-		-2.0		1365.4		+2307	+110	491,763	1,630,667	
321	2640		" "	"	0.5	-		-0.5		1366.9		+2637	+125	492,093	1,630,682	

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/6/79		S. Cotcamp		R. Hulsey		5837		R. Hulsey		5		24		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		
Oklahoma		Headrick		Oklahoma		Jackson		23N		19W				
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1367.4					
322	2970		352° 1.2'	+10.7°	12.9	TH	+14.9	+2.0		1369.4	TP	+2967	+141	492,423 1,630,698
322	2970				13.6	89° 42'	+15.6	+2.0			TP			
	2970		169° 24.6' +180°	+10.7°	+6.2	BH	+14.9	+21.1	1390.5		BS	+2970	+6	
	2970				+14.0	96° 08'	+6.9	+20.9			BS			↑ T 2 N
323	2640		169° 3'	+10.7°	4.5	BH	-13.2	-17.7		1372.8		-2640	+12	492,753 1,630,716
IF	2630		169° 20'	+10.7°	4.5	BH	-13.2	-17.7		1372.8		-2630	-2	492,763 1,630,702
324	2310		169° 3'	+10.7°	4.5	BH	-11.6	-16.1		1374.4		-2310	+10	493,083 1,630,714
325	1980		" "	"	5.7	BH	-9.9	-15.6		1374.9		-1980	+9	493,413 1,630,713
326	1650		" "	"	6.2	BH	-8.3	-14.5		1376.0		-1650	+7	493,743 1,630,711
327	1320		" "	"	12.9	-		-12.9		1377.6		-1320	+6	494,073 1,630,710
328	990		" "	"	11.0	-		-11.0		1379.5		-990	+4	494,403 1,630,708
329	660		" "	"	8.0	-		-8.0		1382.5		-660	+3	494,733 1,630,707
330	330		" "	"	6.1	-		-6.1		1384.4		-330	+1	495,063 1,630,705
331	0		" "	"	5.4	-		-5.4		1385.1	X	0	0	495,393 1,630,704
332	330		348° 50'	+10.7°	2.2	-		-2.2		1388.3		+330	-3	495,723 1,630,701
333	660		" "	"	1.8	-		-1.8		1388.7		+660	-5	496,053 1,630,699
334	990		" "	"	4.9	-		-4.9		1385.6		+990	-8	496,383 1,630,696
335	1320		" "	"	5.3	-		-5.3		1385.2		+1320	-11	496,713 1,630,693
336	1650		" "	"	3.3	-		-3.3		1387.2		+1650	-13	497,043 1,630,691
337	1980		" "	"	0.1	-		-0.1		1390.4		+1980	-16	497,373 1,630,688

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
4/6/79		G. Cotcamp		R. Hulsey		6834		R. Hulsey		2	25						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Headrick		Oklahoma	Jackson		3 N	19 W		L. O. Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS	
														Y	X		
									1390.5								Town of Friendship
338	2310		348°50'	+10.7°	7.8	TH	+11.6	+3.8		1394.3		+2310	-19	497,703	1,630,685		↓
339	2640		" "	"	8.4	TH	+13.2	+4.8		1395.3		+2640	-22	498,033	1,630,682		498,070 + 1,630,665'
$\frac{1}{2}$	2670		348°36'	+10.7°	8.6	TH	+13.4	+4.8		1395.3		+2670	-33	498,063	1,630,671		4-Way Intersect. El.
340	2970		348°50'	+10.6°	10.4	TH	+14.9	+4.5		1395.0	TP	+2970.3	-29	498,360	1,630,675		
340	2970				14.7	89°38'	+19.0	+4.3			TP						
	2640		169°24.2' + 180°	+10.6°	+13.3	-		+13.3			BS	+2640.3	+0				
	2640				+15.0	89°58'	-1.5	+13.5		1408.5	BS						
341	2310		169°24.2'	+10.6°	12.9	-		-12.9		1395.6		-2310	-0	498,687	1,630,675		
342	1980		" "	"	9.2	-		-9.2		1399.3		-1980	-0	499,017	1,630,675		
343	1650		" "	"	9.6	-		-9.6		1398.9		-1650	-0	499,347	1,630,675		
344	1320		" "	"	10.2	-		-10.2		1398.3		-1320	-0	499,677	1,630,675		
345	990		" "	"	10.5	-		-10.5		1398.0		-990	-0	500,007	1,630,675		
346	660		" "	"	7.9	-		-7.9		1400.6		-660	-0	500,337	1,630,675		
347	330		" "	"	7.1	-		-7.1		1401.4		-330	0	500,667	1,630,675		
348	0		" "	"	5.4	-		-5.4		1403.1	TP	0	0	500,997	1,630,675		
349	330		349°10.2'	+10.6°	4.0	-		-4.0		1404.5		+330	-1	501,327	1,630,674		
350	660		" "	"	4.0	-		-4.0		1404.5		+660	-3	501,657	1,630,672		
351	990		" "	"	2.9	-		-2.9		1405.6		+990	-4	501,987	1,630,671		
352	1320		" "	"	1.8	-		-1.8		1406.7		+1320	-5	502,317	1,630,670		
353	1650		" "	"	8.0	TH	+8.3	+0.3		1408.8		+1650	-7	502,647	1,630,668		

SURVEY NOTES-HIGH RESOLUTION DATA
GEO-445

Geosource Inc.

DATE 4/6/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 26
AREA Oklahoma	TOPO MAP Headrick	STATE Oklahoma	COUNTY Jackson	TWP 3N	RANGE 19W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1408.5					
354	1980		349° 10.2'	+106°	7.3	TH	-9.9	+2.6		1411.1		+1980	-8	502,977 1,630,667
355	2310		" "		6.9	TH	+11.6	+4.7		1413.2		+2310	-9	503,307 1,630,666
356	2425		348° 57'	+106°	6.5	TH	+12.1	+5.6		1414.1		+2425	-19	503,422 1,630,656
356	2640		349° 10.2'	+106°	6.8	TH	+13.2	+6.4			TP	+2640	-11	503,637 1,630,664
356	2640				15.0	89° 32'	+21.5	+6.5		1415.0	TP			
	2640		169° 7.1 + 180°	+106°	+148	-		+14.8	1429.8		BS	+2640	-13	
	2640				+1.6	BH	+13.2	+14.8			BS			
357	2310		169° 7.1'	+106°	134	-		-13.4		1416.4		-2310	+11	503,966 1,630,662
358	1980		" "		12.0	-		-12.0		1417.8		-1980	+10	504,296 1,630,661
359	1650		" "		10.9	-		-10.9		1418.9		-1650	+8	504,626 1,630,659
360	1320		" "		10.8	-		-10.8		1419.0		-1320	+6	504,956 1,630,657
361	990		" "		10.1	-		-10.1		1419.7		-990	+5	505,286 1,630,656
362	660		" "		9.3	-		-9.3		1420.5		-660	+3	505,616 1,630,654
363	330		" "		7.4	-		-7.4		1422.4		-330	+2	505,946 1,630,653
364	0		" "		5.4	-		-5.4		1424.4	X	0	0	506,276 1,630,651
365	330		349° 4.1'	+106°	2.7	-		-2.7		1427.1		+330	-2	506,606 1,630,649
366	660		" "		2.1	-		-2.1		1427.7		+660	-4	506,936 1,630,647
367	990		" "		1.7	-		-1.7		1428.1		+990	-6	507,266 1,630,645
368	1320		" "		5.9	TH	+6.6	+0.7		1430.5		+1320	-8	507,596 1,630,643
369	1650		" "		6.7	TH	+8.3	+1.6		1431.4		+1650	-10	507,926 1,630,641

503,420 + 1,630,650 (S)
4-Way Intersect
E1415

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/6/79	INSTRUMENT MAN G. Corcomp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 27
AREA Oklahoma	TOPO MAP Headrick	STATE Oklahoma	COUNTY Jackson	TWP 3N	RANGE 19W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1429.8					
370	1980		349° 4.1'	+10.6°	7.9	TH	+9.9	+2.0		1431.8		+1980	-11	508,256 1,630,640
371	2310		" "	"	8.4	TH	+11.5	+3.2		1433.0		+2310	-13	508,586 1,630,638
371	2480		348° 50.2	+10.6°	7.6	TH	+12.4	+4.8		1434.6		+2480	-24	508,756 1,630,627
372	2640		349° 4.1'	+10.5°	5.9	TH	+13.2	+7.3		1437.1	TP	+2640	-20	508,913 1,630,631
372	2640				14.2	89° 32'	+21.5	+7.3			TP			
	2970		169° 35.7' ¹¹³⁰	+10.5°	+8.5	BH	+14.9	+23.4	1460.5		BS	+2970	+5	
	2970				+14.6	90° 10'	+8.6	+23.2			BS			
373	2640		169° 35.7'	+10.5°	8.1	BH	-13.2	-21.3		1439.2		-2640	-4	509,240 1,630,632
374	2310		" "	"	12.8	BH	-11.6	-24.4		1436.1		-2310	-4	509,570 1,630,632
375	1980		" "	"	9.3	90° 30'	-17.3	-26.6		1433.9		-1980	-3	509,900 1,630,633
376	1650		" "	"	10.7	90° 30'	-14.4	-25.1		1435.4		-1650	-3	510,230 1,630,633
377	1320		" "	"	11.1	90° 30'	-11.5	-22.6		1437.9		-1320	-2	510,560 1,630,634
378	990		" "	"	11.3	90° 30'	-8.6	-19.9		1440.6		-990	-2	510,890 1,630,634
379	660		" "	"	11.3	90° 30'	-5.8	-17.1		1443.4		-660	-1	511,220 1,630,635
380	330		" "	"	9.1	90° 30'	-2.9	-12.0		1448.5		-330	-1	511,550 1,630,635
381	0				5.4	-		-5.4		1455.1	π	0	0	511,880 1,630,636
382	330		349° 39.2'	+10.5°	3.4	-		-3.4		1457.1		+330	0	512,210 1,630,636
383	660		" "	"	4.6	-		-4.6		1455.9		+660	+1	512,540 1,630,637
384	990		" "	"	5.0	-		-5.0		1455.5		+990	+1	512,870 1,630,637
385	1320		" "	"	4.6	-		-4.6		1455.9		+1320	+2	513,200 1,630,638

508,775+1,630,625
4-Way Intersect.
E1.1436

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/6/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6837	NOTES CHECKED BY W. Koel	LINE NO. 2	PAGE 28
AREA Oklahoma	TOPO MAP Headrick/Warren	STATE Oklahoma	COUNTY Jackson	TWP 3N	RANGE 19W	PPM
PARTY MANAGER L.O. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH+ SOUTH- LAT.	EAST+ WEST- DEP.	
									1460.5					
386	1650		349°34.2'	+10.6°	-3.4	-		-3.4		1457.1		+1650	+5	513,530 1,630,641
387	1980		" "	" "	-1.8	-		-1.8		1458.7		+1980	+2	513,860 1,630,638
388	2210		349°18.6'	+10.6°	11.0	TH	+11.1	+0.1		1460.6		+2210	-3	514,090 1,630,633 4-Way Intersect. E1.1462.0
388	2310		349°34.2'	+10.6°	10.7	TH	+11.6	+0.9		1461.4		+2310	+7	514,190 1,630,643
389	2640		349°34.2'	+10.6°	-7.7	TH	+13.2	+5.5		1466.0	TP	+2640	+8	514,520 1,630,644
389	2640				-14.6	89°34'	+20.0	+5.4			TP			
	2640		169°59.9'	+10.6°	+13.8	90°08'	+6.2	+20.0			BS	+2640	+28	
	2640		+180°		+12.0	90°10'	+7.7	+19.7	1485.9	+19.9	BS			
390	2310		169°59.9'	+10.6°	-3.0	BH	-11.6	-14.6		1471.3		-2310	-24	514,850 1,630,648
391	1980		" "	" "	-5.9	BH	-9.9	-15.8		1470.1		-1980	-21	515,180 1,630,651
392	1650		" "	" "	-6.0	BH	-8.3	-14.3		1471.6		-1650	-17	515,510 1,630,655
393	1320		" "	" "	-9.9	-		-9.9		1476.0		-1320	-14	515,840 1,630,658
394	990		" "	" "	-6.7	-		-6.7		1479.2		-990	-10	516,170 1,630,662
395	660		" "	" "	-6.8	-		-6.8		1479.1		-660	-7	516,500 1,630,665
396	330		" "	" "	-6.1	-		-6.1		1479.8		-330	-3	516,830 1,630,669
397	0		" "	" "	-5.4	-		-5.4		1480.5	TP	0	0	517,160 1,630,672 ↑
398	330		349°48.5'	+10.6°	-3.9	-		-3.9		1482.0		+330	+2	517,490 1,630,674 Headrick Quad.
399	660		" "	" "	-2.0	-		-2.0		1483.9		+660	+5	517,820 1,630,677 Warren Quad.
400	990		" "	" "	-0.2	-		-0.2		1485.7		+990	+7	518,150 1,630,679 ↓

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4-8-79	INSTRUMENT MAN R. Hulsey		ROD MAN G. Cotcamp		PARTY NUMBER 6834	NOTES CHECKED BY D. Krol	LINE NO. 2	PAGE 29
AREA Oklahoma	TOPO MAP Warren 7.5'	STATE Oklahoma	COUNTY Jackson	TWP 3 N	RANGE 19 W	PPM	PARTY MANAGER L.O. Davis	

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1485.9					
401	1320		349° 48.5'	+10.6°	4.5	-		-4.5		1481.4		+1320	+9	518,980 / 1,630,681
402	1650		" "	+10.6°	3.2	-		-3.2		1482.7		+1650	+12	518,810 / 1,630,684
403	1980		349° 48.5'	+10.6°	6.1	89°30'	+17.3	+11.2		1497.1	TP	+1980	+14	519,140 / 1,630,686
403	1980				0.4	87°40'	+11.5	+11.1			TP			
403	1980													
	1980		170° 0.0' ± 180°	+10.6°	+14.7	90° 06'	+3.5	+18.2			BS	+1980	+21	
	1980				+12.5	90° 10'	+5.7	+18.3	1515.4		BS			y = -15' x = -2'
404	1650		170° 22'	+10.6°	-7.2	BH	-8.7	-15.9		1499.5		-1740	-29	519,380 / 1,630,678 4-way El. 150'
405	1320		" "	"	-7.3	BH	-6.6	-13.9		1501.5		-1320	-14	519,800 / 1,630,693
406	990		" "	"	-11.0	-		-11.0		1504.4		-990	-10	520,130 / 1,630,697
407	660		" "	"	-9.4	-		-9.4		1506.0		-660	-7	520,460 / 1,630,700
408	330		" "	"	-6.5	-		-6.5		1508.9		-330	-3	520,790 / 1,630,704
409	0		" "	"	-5.4	-		-5.4		1510.0	TP	0	0	521,120 / 1,630,707
410	330		349° 58.4'	+10.6°	0.0	-		-0.0		1515.4		+330	+3	521,450 / 1,630,710
411	660		" "	"	-2.9	-		-2.9		1512.5		+660	+7	521,780 / 1,630,714
412	990		" "	"	-6.1	-		-6.1		1509.3		+990	+10	522,110 / 1,630,717
413	1320		" "	"	-7.1	-		-7.1		1508.3		+1320	+13	522,440 / 1,630,720
414	1650		" "	"	-8.9	-		-8.9		1506.5		+1650	+17	522,770 / 1,630,724

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4-8-79		R. Hulsey		G. Cotcamp		6834		W. Kroll		2		30			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Warren 7.5'		Oklahoma		Jackson		3 & 4 N		19 W				L.O. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1515.4						
415	1980		349° 58.4'	+10.9°	6.9	89° 30'	+17.3	+10.4	+10.6	1526.0	TP	+1980	+30	523,100	1,630,737
415	1980				12.3	89° 20'	+23.0	+10.7			TP				
	2310		170° 13.8' + 180°	+10.9°	+9.2	90° 40'	+26.9	+36.1	1.562.0		BS	+2310	+46		
	2310				+14.4	90° 32'	+21.5	+35.9	(36.0 Ave)		BS				
416	1980		170° 13.8'	+10.9°	-2.8	90° 50'	-28.8	-31.6		1,530.4		-1980	-39	523,430	1,630,744
417	1650		" "	" "	-3.6	90° 50'	-24.0	-27.6		1,534.4		-1650	-33	523,760	1,630,750
418	1320		" "	" "	-5.2	90° 50'	-19.2	-24.4		1,537.6		-1320	-26	524,090	1,630,757
419	990		" "	" "	-12.3	90° 30'	-8.6	-20.9		1,541.1		-990	-20	524,420	1,630,763
419	858		170° 28.3'	+10.9°	-12.4	90° 30'	-7.5	-19.9		1,542.1		-858	-21	524,552	1,630,762
420	660		170° 13.8'	+10.9°	-10.5	90° 30'	-5.8	-15.3		1,545.7		-660	-13	524,750	1,630,770
421	330		" "	" "	-9.4	-	-	-9.4		1,552.6		-330	-7	525,080	1,630,776
422	0				-5.4	-	-	-5.4		1,556.6	π	0	0	525,410	1,630,783
423	330		349° 48.7'	+10.9°	-0.9	-	-	-0.9		1,561.1		+330	+4	525,740	1,630,787
424	660		" "	" "	-9.4	89°	+11.5	+2.1		1,564.1		+660	+8	526,070	1,630,791
425	990		" "	" "	-10.9	89°	-17.3	+6.4		1,568.4		+990	+12	526,400	1,630,795
426	1320		" "	" "	-13.0	89°	+23.0	+10.0		1,572.0		+1320	+16	526,730	1,630,799
427	1650		" "	" "	-13.9	89°	+28.8	+14.9		1,576.9		+1650	+20	527,060	1,630,803
428	1980		" "	" "	-10.4	89°	+34.6	+24.2		1,586.2		+1980	+25	527,390	1,630,808
429	2310		" "	" "	-2.9	89°	+40.3	+37.4		1,599.4		+2310	+29	527,720	1,630,812

↑ y = -18'
T 3 N x = -8'
524,570 + 1,630,770
4-Way Intersect. El. 154'

T 4 N
↓

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/9/79		G. Sotcamp		R Hulsey		6834		W. Krol		2		31			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Warren 7.5'		Oklahoma		Jackson		4 N		19 W				L.O. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1.5620						
430	2640		349°48.7	+11.1°	14.4	88°38'	+62.9	+48.5	+48.4	1.610.4	TP	+2640	+42	528,050	1,630,825
430	2640				13.1	88°40'	+61.4	+48.3			TP				
	1650		169°49' +180°	+11.1°	+9.0	-		+9.0	1.619.4		BS	+1650	+26		
	1650				+14.9	89°48'	-58	+9.1			BS				
431	1320		169°49'	+11.1°	-5.6	-		-5.6		1.613.8		-1320	-21	528,380	1,630,830
432	990		" "	" "	-5.3	-		-5.3		1.614.1		-990	-16	528,710	1,630,835
△	1005		175°24'	+11.1°	-10.9	88°-	+35.1	+24.2		1.643.6		-999	-114	528,701	1,630,737
433	660		169°49'	+11.1°	-9.3	-		-9.3		1.610.1		-660	-11	529,040	1,630,840
434	330		" "	" "	-5.2	-		-5.2		1.614.2		-330	-5	529,370	1,630,846
435	0				-5.4	-		-5.4		1.614.0	π	0	0	529,700	1,630,851
FF	169		346°15'	+11.1°	-7.8	-		-7.8		1.611.6		+169	-8	529,869	1,630,843
436	330		349°41.6'	+11.1°	-12.3	91°-	-5.8	-18.1		1.601.3		+330	+5	530,030	1,630,856
437	660		" "	" "	-11.4	91°30'	-17.3	-28.7		1.590.7		+660	+9	530,360	1,630,860
438	990		" "	" "	-10.3	91°30'	-25.9	-36.2		1.583.2		+990	+14	530,690	1,630,865
439	1320		" "	" "	-6.8	91°30'	-34.5	-41.3		1.578.1		+1320	+18	531,020	1,630,869
440	1650		349°41.6'	+11.2°	-0.6	91°30'	-43.2	-43.8		1.575.6	TP	+1650	+26	531,350	1,630,877
440	1650				-5.4	91°20'	-38.4	-43.8			TP				
	1650		169°28.1' +180°	+11.2°	+4.0	-		+4.0	1.572.6		BS	+1650	+19		
	1650				+12.3	TH	-8.3	+4.0			BS				
441	1320		169°28.1	+11.2°	4.5	-		-4.5		1.575.1		-1320	-15	531,680	1,630,881

E1. 1644
Tri-station Warren
1948+57
last sta. on pavement
529,890+1,630,855 E1.
4-way Intersect. 1612
Okla. 19

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/9/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY W. Krol	LINE NO. 2	PAGE 32
AREA Oklahoma	TOPO MAP Warren 7.5'	STATE Oklahoma	COUNTY Jackson	TWP 4 N	RANGE 19 W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1.5796					
442	990		169°28.1	+11.2°	5.1	-		-5.1		1.574.5		-990	-12	532,010 1,630,864
443	660		" "	" "	4.6	-		-4.6		1.575.0		-660	-8	532,340 1,630,888
444	330		" "	" "	5.7	-		-5.7		1.573.9		-330	-4	532,670 1,630,892
445	0				5.4	-		-5.4		1.574.2	TP	0	0	533,000 1,630,896
446	330		348°54'	+11.2°	6.8	-		-6.8		1.572.8		+330	+1	533,330 1,630,897
447	660		" "	" "	9.9	-		-9.9		1.569.7		+660	+1	533,660 1,630,897
448	990		" "	" "	11.1	-		-11.1		1.568.5		+990	+2	533,990 1,630,898
449	1320		" "	" "	8.8	8H	-6.6	-15.4		1.564.2		+1320	+2	534,320 1,630,898
450	1695		351°8.8'	+11.2°	13.2	8H	-8.3	-21.5			TP	+1644	+67	534,644 1,630,963
450	1695				14.7	90°14'	-6.7	-21.4		1.558.2	TP			
	658		167°53.4'+180°	+11.2°	+7.6	89°-	-11.5	-3.9			BS	+658	-10	
	658				+1.9	89°30'	-5.7	-3.8	1.554.4		BS			
451	330		162°58'	+11.2°	2.0	-		-2.0		1.552.4		-328	+34	534,974 1,630,987
452	109		162°50'	+11.2°	3.9	-		-3.9		1.550.5		-108	+11	535,194 1,630,964
452	0				5.4	-		-5.4		1.549.0	TP	0	0	535,302 1,630,953
453	330	93°	339°7.4'	+10.9°	11.2	92°-	-11.5	-22.7			TP	+325	-57	535,627 1,630,896
453	330				14.1	91°30'	-8.6	-22.7		1.531.7	TP			
	990		169°36.7'+180°	+10.9°	+1.6	TH	-5.0	-3.4			BS	+990	+9	
	990				+3.6	89°36'	-6.9	-3.3	1.528.4		BS			
454	660		169°36.7'	+10.9°	3.0	TH	+3.3	+0.3		1.528.7		-660	-6	535,957 1,630,899

535,180 + 11,630,950
offset 4-way (east)
y = +14'
x = +14'

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4/9/79		G. Cotcamp		R. Hulsey		6834		W. Kroll		2		33			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
Oklahoma		Warren 7.5'		Oklahoma		Jackson		4 N		19 W				L.O. Davis	
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1.528.4						
455	330		169°36.7	+10.9°	-8.7	-	-	-8.7		1.519.7		-330	-3	536,287	1,630,902
456	0				5.4	-	-	-5.4		1.523.0	π	0	0	536,617	1,630,905
457	330		349°15.7'	+10.9°	-13.1	04	-1.7	-14.8		1.513.6		+330	+1	536,947	1,630,906
458	660		" "	" "	-11.0	04	-3.3	-14.3		1.514.1		+660	+2	537,277	1,630,907
459	990		" "	" "	-9.4	91°-	-17.3	-26.7		1.501.7		+990	+3	537,607	1,630,908
460	1320		" "	" "	-6.5	91°-	-23.0	-29.5		1.498.9		+1320	+4	537,937	1,630,909
461	1650		" "	" "	-9.3	90°40'	-19.2	-28.5		1.499.9		+1650	+5	538,267	1,630,910
462	1980		349°15.7'	+10.9°	-0.7	90°30'	-17.3	-18.0		1.510.4	TP	+1980	+6	538,597	1,630,911
462	1980				-14.7	90°06'	-3.5	-18.2			TP				
	990		168°55.2'+180°	+10.9°	+11.1	89°-	-17.3	-6.2	1.504.2		BS	+990	-3		
	990				+6.4	89°16'	-12.7	-6.3			BS				
463	660		168°55.2'	+10.9°	-4.5	89°-	+11.5	+7.0		1.511.2		-660	+2	538,927	1,630,910
464	330		" "	" "	-0.6	-	-	-0.6		1.503.6		-330	+1	539,257	1,630,909
465	0				-5.4	-	-	-5.4		1.498.8	π	0	0	539,587	1,630,908
466	330		349°18.3'	+10.9°	-8.8	-	-	-8.8		1.495.4		+330	+1	539,917	1,630,909
X	628		334°28.6'	+10.9°	-6.9	-	-	-6.9		1.497.3		+608	-159	540,195	1,630,749
467	660		349°18.3'	+10.9°	-10.1	-	-	-10.1		1.494.1		+660	+2	540,247	1,630,910
468	990		349°18.3'	+10.9°	-13.2	90°40'	-11.5	-24.7		1479.5	TP	+990	+4	540,577	1,630,912
468	990				-14.4	90°36'	-10.4	-24.8			TP				in field ↓

chiseled square E1.1498.

last sta. on road.

in field

↓

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/8/79	INSTRUMENT MAN R. Hulsey		ROD MAN G. Cotcamp		PARTY NUMBER 6834		NOTES CHECKED BY R. Hulsey		LINE NO. 2	PAGE 34
AREA Oklahoma	TOPO MAP Warren 7.5	STATE Oklahoma	COUNTY Jackson		TWP 4 N	RANGE 19 W	PPM	PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+	EAST+	COORDINATES		REMARKS
												SOUTH-	WEST-	Y	X	
468										1479.5				540,577	1,630,912	
	330	329	116° 29.2' +180°	+10.9°	+9.3	84° 30'	-31.5	-22.2	1457.3		BS	+325	-49			cross-country (1 mile)
	330				+10.2	84° 20'	-32.4	-22.2			BS					
469	0				5.4	—		-5.4	1451.9		TP	0	0	540,902	1,630,863	
470	330		343° 52.7'	+10.9°	8.0	—		-8.0	1449.3			+329	-30	541,231	1,630,833	↓
471	660		343° 27.5'	+10.9°	12.3	89° 10'	+9.6	-2.7	-2.8	1454.5	TP	+657	-65	541,559	1,630,798	
471	660				14.0	89° 02'	+11.1	-2.9			TP					
	330		158° 42.6'	+10.9°	+2.0	89° 30'	-2.9	-0.9	1453.6		BS	+324	-59			
	330		+180°		+15.0	87° 14'	-15.9	-0.9			BS					
472	0				5.4	—		-5.4	1448.2		TP	0	0	541,883	1,630,739	
473	330		340° 26.9'	+10.9°	7.0	—		-7.0	1446.6			+326	-50	542,209	1,630,689	
474	660		344° 30.8'	+10.9°	6.1	—		-6.1	1447.5			+658	-53	542,591	1,630,686	
475	990		344° 34.4'	+10.9°	5.4	—		-5.4	1448.2		TP	+987	-78	542,870	1,630,661	
475	990				10.4	TH	+5.0	-5.4			TP					
	330		169° 49.6'	+10.9°	+11.7	89°	-5.8	+5.9	1454.1		BS	+330	+4			
	330		+180°		+11.5	89° 02'	-5.6	+5.9			BS					
476	0				5.4	—		-5.4	1448.7		TP	0	0	543,200	1,630,665	
477	330		354° 12'	+10.9°	6.9	—		-6.9	1447.2			+329	+29	543,529	1,630,697	
478	660		354° 38.9'	+10.9°	-7.2	—		-7.2	1446.9		TP	+657	+64	543,857	1,630,729	
478	660				10.5	TH	+3.3	-7.2			TP					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4/8/79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		2	35					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Warren		Oklahoma	Jackson/Kiowa		4N	19W		L.O. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
										1446.9				543,857	1,630,729	
	330		178° 34.8' +180°	+10.7°	+14.9	87° 56'	-12.5	+2.4			BS	+326	+53			cross-country walk only
	330				+14.4	87° 56'	-11.9	+2.5	1449.4		BS					
479	0				5.4	-	-	-5.4		1444.0	TP	0	0	544,183	1,630,782	
480	330		352° 42.5'	+10.7°	14.9	88° 24'	+9.2	-5.7		1443.7	TP	+329	+20	544,512	1,630,802	
480	330				14.0	88° 34'	+8.3	-5.7			TP					
	330		174° 3.8' +180°	+10.7°	+6.4	-	-	+6.4	1450.1		BS	+329	+27			
	330				+8.1	TH	-1.7	+6.4			BS					
481	0				5.4	-	-	-5.4		1444.7	TP	0	0	544,841	1,630,829	
482	330		8° 17.6'	+10.7°	11.7	89°	+5.8	-5.9		1444.2	TP	+312	+107	545,153	1,630,936	
482	330				11.5	89° 02'	+5.6	-5.9			TP					
	326		189° 28.1'	+10.7°	+5.2	-	-	+5.2	1449.4		BS	+306	+112			
	326		-180°		+3.6	BH	+1.6	+5.2			BS					Jackson Co.
483	0				5.4	-	-	-5.4		1444.0	TP	0	0	545,459	1,631,048	south bank of
484	329		324° 17.5'	+10.7°	7.5	89° 40'	+1.9	-5.6		1443.8	TP	+298	-139	545,757	1,630,909	North Fork Red River
484	329				7.2	TH	+1.6	-5.6			TP					Kiowa County
	1320		170° 2.1' +180°	+10.7°	+10.5	-	-	+10.5	1454.3		BS	+1320	+17			
	1320				+8.9	90° 04'	+1.5	+10.4			BS					
485	990		170° 5'	+10.7°	9.0	-	-	-9.0		1445.3		-1225	-17	545,852	1,630,909	90° bend (west)
485	990		170° 2.1'	+10.7°	9.3	-	-	-9.3		1445.0		-990	-13	546,087	1,630,913	first sta. on d.r. road
486	660		" "	" "	7.0	-	-	-7.0		1447.3		-660	-8	546,417	1,630,918	180.735

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
		R. Hulsey		G. Cotcamp		6834		R. Hulsey		2		36		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		
Oklahoma		Warren 7.5'		Oklahoma		Kiowa		4N		19W		PARTY MANAGER L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1454.3					
487	330		170° 2.1'	+10.7°	5.8	-		-5.8		1448.5		-330	-4	546,747 1,630,922
488	0				5.4	-		-5.4		1448.9	TP	0	0	547,077 1,630,926
489	330		351° 0.2'	+10.7°	0.4	-		-0.4		1453.9		+330	+10	547,407 1,630,936
490	660		" "	" "	3.2	89°20'	+7.7	+4.5		1458.8		+660	+20	547,737 1,630,946
491	990		" "	" "	0.0	89°20'	+11.5	+11.5		1465.8		+990	+29	548,067 1,630,955
492	1320		351° 0.2'	+10.7°	6.6	88°50'	+26.9	+20.3		1474.6		+1320	+39	548,397 1,630,965
TP	1409		350° 14.9'	+10.7°	4.2	88°50'	+28.7	+24.5			TP	+1409	+23	548,486 1,630,949
TP	1409				8.2	88°40'	+32.8	+24.6		1478.9	TP			1325' offset east
	700		259° 27.6'	+10.7°	+7.9	-		+7.9	1486.8		BS	-2	+700	
	700		-180°		+11.4	TH	-3.5	+7.9			BS			
TP	0				5.5	-		-5.5		1481.3	TP	0	0	548,484 1,631,649
TP	625		80° 10.3'	+10.7°	7.7	-		-7.7		1479.1	TP	-10	+625	548,474 1,632,274
TP	625				4.6	BH	-3.1	-7.7			TP			90° Bend
	1561		169° 57.1' +180°	+10.7°	+8.8	89°20'	-18.2	-9.4	1469.7		BS	+1561	+18	
	1561				+13.3	89°10'	-22.7	-9.4			BS			
493	1320		169° 45'	+10.7°	1.2	89°20'	+15.4	+14.2		1483.9		-1320	-10	548,715 1,632,282
494	990		" "	" "	1.1	89°20'	+11.5	+10.4		1480.1		-990	-8	549,045 1,632,284
495	660		" "	" "	4.7	89°40'	+3.8	-0.9		1468.8		-660	-5	549,325 1,632,287
496	330		" "	" "	6.2	-		-6.2		1463.5		-330	-3	549,705 1,622,289
497	0				5.5	-		-5.5		1464.2	TP	0	0	550,035 1,632,292

y = +21'
x = -1'
548,465 1,630,950(s)
90° Bend (east)

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
4-11-79		R. Hulsey		G. Catcamp		6834		R. Hulsey		2	37						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Warren 7.5'		Oklahoma	Kiowa		4N	19W		L.O. Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1469.7								
498	330		350° 23'	+10.7°	2.9	-		-2.9		1466.8		+330	+6	550,365	1,632,298		
499	660		" "	" "	2.5	TH	+3.3	+0.8		1470.5		+660	+12	550,695	1,632,304		
500	990		" "	" "	1.5	TH	+5.0	+3.5		1473.2		+990	+19	551,025	1,632,311		
TP	1098		349° 22.9'	+10.7°	4.6	89°30'	+9.6	+5.0			TP	+1098	+2	551,133	1,632,294	90° Bend (east)	
TP	1098				7.7	89°20'	+12.8	+5.1		1474.8	TP					1330' offset east	
	620		261° 3.3' - 180°	+10.7°	+9.7	91°30'	+16.2	+25.9	1500.7		BS	-19	+620				
	620				+11.5	91°20'	+14.4	+25.9			BS						
TP	0				5.5	-		-5.5		1495.2	TP	0	0	551,114	1,632,914	551,100 + 7,633,600(s)	
TP	710		81° 34.6'	+10.7°	14.5	90°30'	-6.2	-20.7		1480.0	TP	-28	+709	551,086	1,633,623	T-rd. El. 1481	
TP	710				12.5	90°40'	-8.3	-20.8			TP					Line Bands North	
	882		171° 56.5' + 180°	+10.7°	+12.0	-		+12.0	1492.0		BS	+881	+41				
	882				+7.6	BH	+4.4	+12.0			BS						
501	660		171° 56.5'	+10.7°	10.0	-		-10.0		1482.0		-659	-30	551,308	1,633,634		
502	330		" "	" "	13.5	-		-13.5		1478.5		-330	-15	551,637	1,633,649		
503	0				5.5	-		-5.5		1486.5	TP	0	0	551,967	1,633,664		
504	330		351° 55.2'	+10.7°	12.1	-		-12.1		1479.9		+330	+15	552,297	1,633,679		
505	660		" "	" "	12.0	90°40'	-7.7	-19.7		1472.3		+659	+30	552,626	1,633,694		
506	990		" "	" "	8.9	BH	-5.0	-13.9		1478.1		+989	+45	552,956	1,633,709		
507	1320		351° 55.2'	+10.7°	12.1	-		-12.1		1479.9	TP	+1319	+60	553,286	1,633,724		
507	1320				5.5	BH	-6.6	-12.1			TP						

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4-11-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		2		38				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Oklahoma		Warren		Oklahoma		Kiowa		4N		19W				L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS		
												NORTH+ SOUTH - LAT.	EAST+ WEST - DEP.		Y	X
507										1479.9						
	1650		170° 58.1' +180°	+10.7°	+10.3	90° 30'	+14.4	+24.7	1504.6		BS	+1649	+48			
	1650				+5.5	90° 40'	+19.2	+24.7			BS					
508	1320		170° 58.1'	+10.7°	9.3	90° 30'	-11.5	-20.8		1483.8		-1319	-38	553,616	1,633,734	
509	990		" "	" "	11.0	90° 40'	-11.5	-22.5		1482.1		-990	-29	553,945	1,633,743	
510	660		" "	" "	12.3	91° -	-11.5	-23.8		1480.8		-660	-19	554,275	1,633,753	
511	330		" "	" "	13.1	91° -	-5.8	-18.9		1485.7		-330	-10	554,605	1,633,762	
512	0				5.5	-		-5.5		1499.1	TP	0	0	554,935	1,633,772	
513	330		321° 34'	+10.7°	1.5	88° 30'	+8.6	+7.1		1511.7		+292	-154	555,227	1,633,618	
514	655		318° 49.8'	+10.7°	9.5	88° 30'	+17.1	+7.6			TP	+565	-332	555,500	1,633,440	Curve
514	655				11.3	88° 20'	+19.0	+7.7		1512.3	TP					
	330		156° 42.6' +180°	+10.7°	+8.9	-		+8.9	1521.2		BS	+322	-72			
	330				+7.2	BH	+1.7	+8.9			BS					
515	0				5.5	-		-5.5		1515.7	TP	0	0	555,822	1,633,368	Set-up in middle of road
516	329		31° 8.4'	+10.7°	5.3	87° 40'	+13.4	+8.1		1529.3	TP	+245	+219	556,067	1,633,587	Curve
516	329				6.2	87° 30'	+14.3	+8.1			TP					
	330		195° 18.9' -180°	+10.7°	+3.3	-		+3.3			BS	+297	+145			
	330				+5.1	TH	-1.7	+3.4	1532.7		BS					
517	0				5.5	-		-5.5		1527.2	TP	0	0	556,366	1,633,732	T 4 N
X	110		49° 38.8'	+10.7°	2.8	89° -	+1.9	-0.9		1531.8		+54	+96	556,420	1,633,828	chiseled square

SURVEY NOTES-HIGH RESOLUTION DATA

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
4-11-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		2		39			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM			
Oklahoma		Warren 7.5'		Oklahoma		Kiowa		5 N		19 W		L.O. Davis			
STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1532.7						
TP	159		34° 28.5'	+10.7°	8.9	-		-8.9		1523.8	TP	+112 +2	+113	556,480 1,633,845	Curve
JP	159				8.1	BH	-0.8	-8.9			TP				
	172		260° 57.5'	+10.7°	+0.8	-		+0.8	1524.6		BS	-5 +2	+172		
	172		-180°		+1.7	TH	-0.9	+0.8			BS				
518	0				5.5	-		-5.5		1519.1	TP	○	○	556,477 1,634,017	556,410 1,634,175(s)
JL	186		100° 41'	+10.7°	10.5	-		-10.5		1514.1		-68	+173	556,409 1,634,190	T-rd.
519	279		29° 39.9'	+10.7°	14.4	-		-14.4		1510.2	TP	+213	+181	556,690 1,634,198	Shooting thru 90° Bend
519	279				13.0	BH	-1.4	-14.4			TP				
	1980		169° 18.3' + 180°	+10.8°	+1.5	89° 20'	-23.0	-21.5	1488.7		BS	+1980	+4		
	1980				+7.2	89° 10'	-28.8	-21.6			BS				
520	1650		169° 18.3'	+10.8°	0.5	89° 20'	+19.2	+18.7		1507.4		-1650	-3	557,020 1,634,199	
521	1320		" "	" "	2.3	89° 20'	+15.4	+13.1		1501.8		-1320	-2	557,350 1,634,200	
522	990		" "	" "	2.3	89° 20'	+11.5	+9.2		1497.9		-990	-2	557,680 1,634,200	
523	660		" "	" "	0.9	-		-0.9		1487.8		-660	-1	558,010 1,634,201	
524	330		" "	" "	5.3	-		-5.3		1483.4		-330	-1	558,340 1,634,201	
525	0				5.5	-		-5.5		1483.2	TP	○	○	558,670 1,634,202	
526	330		349° 31.4'	+10.8°	7.2	-		-7.2		1481.5		+330	+2	559,000 1,634,204	
527	660		" "	" "	8.7	-		-8.7		1480.0		+660	+4	559,330 1,634,206	
528	990		" "	" "	5.8	-		-5.8		1482.9		+990	+6	559,660 1,634,208	
529	1320		" "	" "	5.0	TH	+6.6	-1.6		1487.1		+1320	+7	559,990 1,634,209	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
4-11-79		R. Hulsey		G. Cotcamp		6834		R. Hulsey		2	40					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Warren/Lone Wolf		Oklahoma	Kiowa		5 N	19 W		L.O. Davis						
STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+	EAST+	COORDINATES		REMARKS
												SOUTH-	WEST-	Y	X	
												LAT.	DEP.	Y	X	
									1488.7							
530	1650		349° 31.4'	+108°	3.5	89° 30'	+14.4	+10.9		1499.6	TP	+1650	+9	560,320	1,634,211	
530	1650				8.3	89° 20'	+19.2	+10.9			TP					
	1980		170° 2.0'	+10.8°	+5.6	-		+5.6	1505.2		BS	+1980	+29			
	1980		+180°		+4.4	90° 02'	+1.1	+5.5			BS					
531	1650		170° 2'	+10.8°	5.0	-		-5.0		1500.2		-1650	-24	560,650	1,634,216	
532	1320		" "	"	5.9	-		-5.9		1499.3		-1320	-19	560,980	1,634,221	
533	990		" "	"	5.5	-		-5.5		1499.7		-990	-14	561,310	1,634,226	
534	660		" "	"	4.5	-		-4.5		1500.7		-660	-10	561,640	1,634,230	
#	635		170° 44'	+10.8°	4.0	-		-4.0		1501.2		-635	-17	561,665	1,634,223	561,665 1,634,225(s)
535	330				6.8	TH										4-way Intersect.
X	720		183° 55'	+10.8°	6.8	TH	+3.6	-3.2		1502.0		-696	-183	561,604	1,634,057	Chiseled □ El. 1503
535	330		170.2'	+10.8°	4.2	-		-4.2		1501.0		-330	-5	561,970	1,634,235	
536	0				5.5	-		-5.5		1499.7	T	0	0	562,300	1,634,240	
537	330		349° 49.3'	+10.8°	8.8	-		-8.8		1496.4		+330	+4	562,630	1,634,244	^
538	660		" "	"	11.4	-		-11.4		1493.8		+660	+7	562,960	1,634,247	Warren Quad.
539	990		" "	"	12.3	-		-12.3		1492.9		+990	+11	563,290	1,634,251	Lone Wolf Quad
540	1320		" "	"	7.8	BH	-6.6	-14.4		1490.8		+1320	+14	563,620	1,634,254	↓
541	1650		" "	"	7.4	BH	-8.3	-15.7		1489.5		+1650	+18	563,950	1,634,258	
542	1980		349° 49.3'	+10.8°	5.5	BH	-9.9	-15.4	-15.5	1489.7	TP	+1980+2	+21	564,282	1,634,261	
542	1980				14.5	90° 02'	-1.1	-15.6			TP					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4-11-79		R. Hulsey		G. Cotcamp		6834				2		41				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Oklahoma		Kone Wolf 7.5'		Oklahoma		Kiowa								L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
542										1489.7						
	1650		170° 1.1' +180°	+10.8°	+2.7	-		+2.7	1492.2	+2.5	BS	+1650+3	+24			
	1650				+10.6	TH	-8.3	+2.3				BS				
543	1320		170° 1.1'	+10.8°	2.0	-		-2.0		1490.2		-1320	-19	564,615	1,634,266	
544	990		" "	"	1.1	-		-1.1		1491.1		-990	-14	564,945	1,634,271	
545	660		" "	"	0.6	-		-0.6		1491.6		-660	-9	565,275	1,634,276	
546	330		" "	"	1.0	-		-1.0		1491.2		-330	-5	565,605	1,634,280	
547	0				5.4	-		-5.4		1486.8	TP	0	0	565,935	1,634,285	
548	330		350° 10.3'	+10.8°	11.9	-		-11.9		1480.3		+330	+6	566,265	1,634,291	
549	660		" "	"	10.1	-		-10.1		1482.1		+660	+11	566,595	1,634,296	
550	990		" "	"	5.5	-		-5.5		1486.7		+990	+17	566,925	1,634,302	566,950+1,634,306(s)
551	1015		349° 52'	+10.8°	5.1	-		-5.1		1487.1		+1015	+12	566,950	1,634,297	T-rd El. 1487
552	1320		350° 10.3'	+10.8°	5.0	-		-5.0		1487.2		+1320	+22	567,255	1,634,307	horiz correct.
552	1650		356° 16.3'	+11.1°	9.9	-		-9.9		1482.3	TP	+1649-3	+37	567,581	1,634,322	y = +11'
	1980		169° 23.9' +180°	+11.1°	+14.0	89° 22'	-21.9	-7.9	1474.4		BS	+1980-3	+17			x = 0'
	1980				+12.8	89° 24'	-20.7	-7.9				BS				
553	1650		169° 23.9'	+11.1°	13.0	89° 28'	+15.4	+2.4		1476.8		-1650	-14	567,908	1,634,325	
554	1320		" "	"	6.0	89° 30'	+11.5	+5.5		1479.9		-1320	-11	568,238	1,634,320	
555	990		" "	"	3.1	89° 30'	+8.6	+5.5		1479.9		-990	-9	568,568	1,634,330	
551	660		" "	"	4.5	-		-4.5		1469.9		-660	-6	568,898	1,634,333	

SURVEY NOTES-HIGH RESOLUTION DATA
GEO-445

Geosource Inc.

DATE 4/12/79	INSTRUMENT MAN R. Hulsey	ROD MAN G. Cotcamp	PARTY NUMBER 6834	NOTES CHECKED BY	LINE NO. 2	PAGE 42
AREA Oklahoma	TOPO MAP	STATE Oklahoma	COUNTY Kiowa	TWP	RANGE	PPM
					PARTY MANAGER L.O. Davis	

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1474.4					
557	330		169°23.9'	+11.1°	6.9	-		-6.9		1467.5		-330	-3	569,228 / 634,336
558	0				5.4	-		-5.4		1469.0	TP	0	0	569,558 / 634,339
559	330		349°58.3'	+11.1°	1.1	-		-1.1		1473.3		+330	+6	569,888 / 634,345
560	660		" "	"	0.1	89°40'	+3.8	+3.7		1478.1		+660	+12	570,218 / 634,351
561	990		" "	"	3.9	89°30'	+8.6	+4.7		1479.1		+990	+19	570,548 / 634,358
562	1320		" "	"	5.9	89°30'	+11.5	+5.6		1480.0		+1320	+25	570,878 / 634,364
563	1650		349°58.3'	+11.1°	6.5	89°30'	+14.4	+7.9		1482.3	TP	+1650-3	+31	571,205 / 634,370
563	1650				11.2	89°20'	+19.2	+8.0			TP			
	1320		168°50.3 + 180°	+11.1°	+4.7	-		+4.7			BS	+1320-2	-1	
	1320				+11.2	TH	-6.6	+4.6	1486.9		BS			
564	990		168°50.3	+11.1°	3.8	-		-3.8		1483.1		-990	+1	571,533 / 634,370
565	660		" "	"	3.2	-		-3.2		1483.7		-660	+1	571,863 / 634,370
566	330		" "	"	1.2	-		-1.2		1485.7		-330	0	572,193 / 634,369
TP	300		167°54.7'	+11.1°	6.5	89°	+5.2	+1.3		1485.6		-300	+5	572,223 / 634,374
567	0				5.4	-		-5.4		1481.5	TP	0	0	572,523 / 634,369 last sta. on road
568	330		349°39.7'	+11.1°	13.1	91°30'	-8.6	-21.7		1465.2		+330	+4	572,853 / 634,373 at N-S fence
569	657		349°39.7'	+11.1°	11.3	-		-11.3		1475.6	TP	+657-3	+9	573,177 / 634,378
569	657				8.0	8H	-3.3	-11.3			TP			Sta. 567+568 (walk only)
	980		164°49.4 + 180°	+11.1°	+7.8	-		+7.8	1483.4		BS	+977-3	-70	
	980				+12.7	TH	-4.9	+7.8			BS			

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4/12/79		G. CoT camp		W. Krol		6834				2		43				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Oklahoma		Lone Wolf		Oklahoma		Kiowa								L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS		
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y	X
									1483.4						Sta. 569-572 follow	
570	650		162° 45'	+11.1°	7.8	-		-7.8		1475.6		-646	+70	573,505	1,634,378	single track in pasture
571	326		156° 42'	+11.1°	5.9	-		-5.9		1477.5		-319	+69	573,832	1,634,377	
572	0				5.4	-		-5.4		1478.0	π	0	0	574,151	1,634,308	
573	330		320° 46'	+11.1°	3.7	-		-3.7		1479.7		+291	-156	574,442	1,634,152	
574	660		317° 46'	+11.1°	3.6	-		-3.6		1479.8		+565	-341	574,716	1,633,967	
575	984		313° 33.6'	+11.1°	2.3	-		-2.3		1481.1	TP	+803-3	-569	574,951	1,633,739	
575	984				7.2	TH	+4.9	-2.3			TP					
	330		113° 37.5' +180°	+11.1°	+6.1	-		+6.1	1487.2		BS	+188-3	-271			
	330				+7.8	TH	-1.7	+6.1			BS					
576	0				5.4	-		-5.4		1481.8	π	0	0	575,136	1,633,468	
577	330		311° 49'	+11.1°	4.8	-		-4.8		1482.4	TP	+263-3	-199	575,396	1,633,269	
577	330				6.4	TH	+1.6	-4.8			TP					
	326		152° 54' +180°	+11.1°	+14.0	88° 30'	-8.5	+5.5			BS	+313-3	-90			curve around mountain
	326				+14.9	88° 20'	-9.5	+5.4	1487.8		BS					
578	0				5.4	-		-5.4		1482.4	π	0	0	575,706	1,633,179	
579	330		358° 5.2'	+11.1°	2.8	-		-2.8		1485.0	TP	+326-3	+53	576,029	1,633,232	
579	330				4.5	TH	+1.7	-2.8			TP					
	660		207° 5.2' -180°	+11.1°	+10.4	TH	-3.3	+7.1			BS	+519-3	+408			
	660				+14.7	89° 26'	-7.7	+7.0	1492.0		BS					
580	330		207° 5.2'	+11.1°	2.2	TH	+1.6	-0.6		1491.4		-259	-204	576,286	1,633,436	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4/12/79		G. Cotcamp		W. Kral		6834		R. Hulsey		2		44				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PARTY MANAGER				
Oklahoma		Lone Wolf		Oklahoma		Kiowa		5N		19W		L.O. Davis				
STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS		
												NORTH + SOUTH -	EAST + WEST -		Y	X
									1492.0							
581	0				5.4	-		-5.4		1486.6	TP	0	0	576,545	1,633,640	in field
582	330		29°42.5'	+11.1°	3.1	-		-3.1		1488.9		+250	+216	576,795	1,633,856	
583	660		" "	"	2.6	TH	+3.3	+0.7		1492.7		+500	+431	577,045	1,634,071	
584	990		" "	"	1.6	89°30'	+8.6	+7.0		1499.0		+749	+647	577,294	1,634,287	last sta. in field
585	1260		28°56.5'	+11.1°	1.5	89°30'	+11.0	+9.5		1501.5		+965	+811	577,510	1,634,451	577,510 + 1,634,450(s)
585	1315		27°45'	+11.9°	7.7	89°14'	+17.6	+9.9			TP	+1012	+839	577,557	1,634,479	T-intersect. el. 1501
585	1315				13.1	89°	+22.9	+9.8		1501.8	TP					dit road
	2640		168°10.9'+180°	+11.9°	+4.3	-		+14.3	1516.1		BS	+2640	+4			
	2640				+1.2	BH	+13.2	+14.4			BS					
586	2310		168°10.9'	+11.9°	13.5	-		-13.5		1502.6		-2310	-3	577,887	1,634,480	
587	1980		" "	"	12.3	-		-12.3		1503.8		-1980	-3	578,217	1,634,480	
588	1650		" "	"	10.9	-		-10.9		1505.2		-1650	-2	578,547	1,634,481	
589	1320		" "	"	13.1	-		-13.1		1503.0		-1320	-2	578,877	1,634,481	
590	990		" "	"	10.1	BH	-5.0	-15.1		1501.0		-990	-1	579,207	1,634,482	
591	660		" "	"	10.9	-		-10.9		1505.2		-660	-1	579,537	1,634,482	
592	330		" "	"	6.8	-		-6.8		1509.3		-330	0	579,867	1,634,483	
593	0				5.4	-		-5.4		1510.7	TP	0	0	580,197	1,634,483	
594	330		348°21.2'	+11.9°	5.5	-		-5.5		1510.6		+330	+1	580,527	1,634,484	
595	660		" "	"	5.8	-		-5.8		1510.3		+660	+3	580,857	1,634,486	
596	990		" "	"	3.5	-		-3.5		1517.6		+990	+4	581,187	1,634,487	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4-16-79	INSTRUMENT MAN R. Hulsey	ROD MAN W. Krol	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 15
AREA Oklahoma	TOPO MAP Lone Wolf 7.5'	STATE Oklahoma	COUNTY Kiowa	TWP 5 N	RANGE 19 W	PPM
PARTY MANAGER L.O. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1516.1					
597	1320		348° 21.2'	+11.9°	1.4	-	-1.4		1514.7			+1320	+6	581,517 1,634,489
598	1650		" "	"	2.0	-	-2.0		1514.1			+1650	+7	581,847 1,634,490
599	1980		" "	"	3.5	-	-3.5		1512.6			+1980	+9	582,177 1,634,492
600	2310		" "	"	4.9	-	-4.9		1511.2			+2310	+10	582,507 1,634,493
7	2580		348° 7'	+11.9°	2.6	-	-2.6		1513.5			+2580	+1	582,777 1,634,484
601	2640		348° 21.2'	+11.9°	2.4	-	-2.4				TP	+2640	+12	582,837 1,634,495
601	2640				10.0	89°50'	+7.7	-2.3		1513.8	TP			
	2310		168°53.3'+180°	+11.9°	+11.5	-	+11.5		1525.4	+11.6	BS	+2310	+32	
	2310				+0.1	BH	+11.6	+11.7			BS			
602	1980		168°53.3'	+11.9°	10.4	-	-10.4		1515.0			-1980	-27	583,167 1,634,500
603	1650		" "	"	10.2	-	-10.2		1515.2			-1650	-23	583,497 1,634,504
604	1320		" "	"	9.1	-	-9.1		1516.3			-1320	-18	583,827 1,634,509
605	990		" "	"	7.0	-	-7.0		1518.4			-990	-14	584,157 1,634,513
606	660		" "	"	6.1	-	-6.1		1519.3			-660	-9	584,487 1,634,518
607	330		" "	"	5.5	-	-5.5		1519.9			-330	-5	584,817 1,634,522
608	0				5.4	-	-5.4		1520.0		TP	0	0	585,147 1,634,527
609	330		348°52.7'	+11.9°	2.5	-	-2.5		1522.9			+330	+4	585,477 1,634,531
610	660		" "	"	1.0	-	-1.0		1524.4			+660	+9	585,807 1,634,536
611	990		" "	"	0.9	-	-0.9		1524.5			+990	+13	586,137 1,634,540
612	1320		" "	"	0.9	-	-0.9		1524.5			+1320	+18	586,467 1,634,545

y = -18'
x = -26'
582,785 1,634,510 (s)
4-way int. El. 1513

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4-16-79		R. Hulsey		W. Kral		6834		R. Hulsey		2		46		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		
Oklahoma		Lone Wolf 7.5'		Oklahoma		Kiowa		5 & 6 N		19 W		PARTY MANAGER L. O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
613	1650		348°52.7'	+11.9°	0.8	-		-0.8	1525.4					
614	1980		" "	"	1.9	-		-1.9		1524.6		+1650	+22	586,797 / 1,634,549
615	2310		348°52.7'	+11.9°	13.6	TH	+11.6	-2.0		1523.5		+1980	+27	587,127 / 1,634,554
615	2310				8.8	89°56'	+6.7	-2.1		1523.4	TP	+2310	+31	587,457 / 1,634,558
	1980		168°59.9'+120°	+11.9°	+12.6	-		+12.6			TP			
	1980				+2.8	BH	+9.9	+12.7	1536.1		BS	+1980	+31	
616	1650		168°59.9'	+11.9°	11.1	-		-11.1		1525.0		-1650	-26	587,787 / 1,634,563
47	1370		169°29'	+11.9°	9.4	-		-9.4		1526.7		-1370	-33	588,065 / 1,634,560 (S)
617	1320		168°59.9'	+11.9°	9.2	-		-9.2		1526.9		-1320	-21	588,117 / 1,634,568
618	990		" "	"	8.5	-		-8.5		1527.6		-990	-16	588,447 / 1,634,573
619	660		" "	"	7.5	-		-7.5		1528.6		-660	-10	588,777 / 1,634,579
620	330		" "	"	6.4	-		-6.4		1529.7		-330	-5	589,107 / 1,634,584
621	0				5.4	-		-5.4		1530.7	TP	0	0	589,437 / 1,634,589
622	330		349°9.1'	+11.6°	4.9	-		-4.9		1531.2		+330	+4	589,767 / 1,634,593
623	660		" "	"	5.2	-		-5.2		1530.9		+660	+9	590,097 / 1,634,598
624	990		" "	"	4.1	-		-4.1		1532.0		+990	+13	590,427 / 1,634,602
625	1320		" "	"	2.1	-		-2.1		1534.0		+1320	+17	590,757 / 1,634,606
626	1650		" "	"	0.2	-		-0.2		1535.9		+1650	+22	591,087 / 1,634,611
627	1980		349°9.1'	+11.6°	9.3	TH	+9.9	+0.6		1536.7	TP	+1980	+26	591,917 / 1,634,615
627	1980				5.3	89°56'	+5.8	+0.5			TP			

y = +2' ↑
x = -4' T 5N
588,065 / 1,634,560 (S)
4-way int. El. 1527
T 6 N
↓

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4-16-79	INSTRUMENT MAN R. Hulsey	ROD MAN W. Krol	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 47
AREA Oklahoma	TOPO MAP Lone Wolf 7.5'	STATE Oklahoma	COUNTY Kiowa	TWP 6 N	RANGE 19 W	PPM
					PARTY MANAGER L.O. Davis	

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
627										1536.7					
	1980		168° 50.2' + 180°	+11.6°	+13.3	-		+13.3	1550.0		BS	+1980	+15		
	1980				+3.4	BH	+9.9	+13.3			BS				
628	1650		168° 50.2'	+11.6°	11.2	-		-11.2		1538.8		-1650	-13	591,747	1,634,617
629	1320		" "	" "	9.4	-		-9.4		1540.6		-1320	-10	592,077	1,634,620
630	990		" "	" "	8.0	-		-8.0		1542.0		-990	-8	592,407	1,634,622
631	660		" "	" "	7.4	-		-7.4		1542.6		-660	-5	592,737	1,634,625
632	330		" "	" "	6.9	-		-6.9		1543.1		-330	-3	593,067	1,634,627
4F	48		174° 44.9'	+11.6°	5.1	-		-5.1		1544.9		-48	-5	593,349	1,634,625
633	0				5.4	-		-5.4		1544.6	X	0	0	593,397	1,634,630
634	330		349° 32.7'	+11.4'	4.5	-		-4.5		1545.5		+330	+5	593,727	1,634,635
635	660		" "	" "	5.0	-		-5.0		1545.0		+660	+11	594,057	1,634,641
636	990		" "	" "	3.9	-		-3.9		1546.1		+990	+16	594,387	1,634,646
637	1320		" "	" "	3.0	-		-3.0		1547.0		+1320	+22	594,717	1,634,652
638	1650		" "	" "	2.1	-		-2.1		1547.9		+1650	+27	595,047	1,634,657
639	1980		349° 32.7'	+11.4°	1.5	-		-1.5		1548.5	TP	+1980	+33	595,377	1,634,663
639	1980				11.4	TH	+9.9	-1.5			TP				
	1980		169° 45.7' + 180°	-11.4'	+10.1	-		+10.1	1558.7	+10.2	BS	+1980	+40		
	1980				+13.8	89° 54'	-3.5	+10.3			BS				
640	1650		169° 45.7'	+11.4°	9.1	-		-9.1		1549.6		-1650	-33	595,707	1,634,670
641	1320		" "	" "	8.5	-		-8.5		1550.2		-1320	-27	596,037	1,634,676

x=0'
y=-11'
593,360 + 1,634,625 (s)
4-way int. El. 1545

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4-16-79	INSTRUMENT MAN R. Hulsey		ROD MAN W. Kral		PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey		LINE NO. 2	PAGE 48
AREA Oklahoma	TOPO MAP Lone Wolf 7.5'	STATE Oklahoma	COUNTY Kiowa	TWP 6N	RANGE 19W	PPM	PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1558.7					
642	990		169°45.7'	+11.4°	7.9	-		-7.9		1550.8		-990	-20	596,367 1,634,683
643	660		" "	+11.4°	7.1	-		-7.1		1551.6		-660	-13	596,697 1,634,690
644	330		" "	+11.4°	6.2	-		-6.2		1552.5		-330	-7	597,027 1,634,696
645	0				5.4	-		-5.4		1553.3	TP	0	0	597,357 1,634,703
646	330		349°54.3'	+11.2°	4.8	-		-4.8		1553.9		+330	+6	597,687 1,634,709
647	660		" "	"	3.6	-		-3.6		1555.1		+660	+13	598,017 1,634,716
648	990		" "	"	2.9	-		-2.9		1555.8		+990	+19	598,347 1,634,722
649	+320													
47	1270		349°31'	+11.2°	2.6	-		-2.6		1556.1		+1270	+16	598,627 1,634,719
649	1320		349°54.3'	+11.2°	2.7	-		-2.7		1556.0		+1320	+25	598,677 1,634,728
650	1650		" "	"	3.2	-		-3.2		1555.5		+1650	+32	599,007 1,634,735
651	1980		349°54.3'	+11.2°	3.3	-		-3.3		1555.4	TP	+1980	+38	599,337 1,634,741
651	1980				13.1	TH	+9.9	-3.2			TP			
	1320		169°42.9'+180	+11.0°	+7.6	-		+7.6	1563.0		BS	+1320	+16	
	1320				+1.1	BH	+6.6	+7.7			BS			
652	990		169°42.9'	+11.0°	6.9	-		-6.9		1556.1		-990	-12	599,667 1,634,745
653	660		" "	"	6.8	-		-6.8		1556.2		-660	-8	599,997 1,634,749
654	330		" "	"	6.0	-		-6.0		1557.0		-330	-4	600,327 1,634,753
655	0				5.4	-		-5.4		1557.6	TP	0	0	600,657 1,634,757
656	330		350° 2.7'	+11.0°	4.5	-		-4.5		1558.5		+330	+6	600,987 1,634,763

y = -8'
x = +9'
598,635 + 1,634,710(s)
4-way int. el. 1556

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/17/79	INSTRUMENT MAN R. Hulkey	ROD MAN W. Krol	PARTY NUMBER 6834	NOTES CHECKED BY W. Krol	LINE NO. 2	PAGE 49
AREA Oklahoma	TOPO MAP	STATE Oklahoma	COUNTY Kiowa	TWP 6 N	RANGE 19 W	PPM
					PARTY MANAGER L.O. Davis	

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH +	EAST +	COORDINATES		REMARKS
												SOUTH -	WEST -	Y	X	
												LAT.	DEP.			
									1563.0							
657	660		350° 2.7'	+11.0°	2.5	-		-2.5		1560.5		+660	+12	601,317	1,634,769	
658	990		" "	"	2.0	-		-2.0		1561.0		+990	+18	601,647	1,634,775	
659	1320		350° 2.7'	+11.0°	2.4	-		-2.4		1560.6	TP	+1320	+24	601,977	1,634,781	
659	1320				8.9	TH	+6.6	-2.3			TP					
	990		169° 39.5' +180°	+11.0°	+8.7	-		+8.7	1569.3		BS	+990	+11			
	990				+3.7	BH	+5.0	+8.7			BS					
660	660		169° 39.5'	+11.0°	8.0	-		-8.0		1561.3		-660	-8	602,307	1,634,784	
661	330		" "	"	5.9	-		-5.9		1563.4		-330	-4	602,637	1,634,788	
662	0				5.4	-		-5.4		1563.9	TP	0	0	602,967	1,634,792	
663	330		349° 44.9'	+11.0°	7.0	-		-7.0		1562.3		+330	+4	603,297	1,634,796	
664	660		" "	"	8.5	-		-8.5		1560.8		+660	+9	603,627	1,634,801	603,920+ / 1,634,795
664	950		349° 21'	+11.0°	6.1	-		-6.1		1563.2		+950	+6	603,917	1,634,798	4-way int. Eli. 1563
665	990		349° 44.9'	+11.0°	6.8	-		-6.8		1562.5	TP	+990	+13	603,957	1,634,805	y=-3'
665	990				1.8	BH	-5.0	-6.8			TP					x=+3'
	2640		169° 36' +180°	+11.0°	+14.0	-		+14.0	1576.5		BS	+2640	+28			
	2640				+0.8	BH	+13.2	+14.0			BS					
666	2310		169° 36'	+11.0°	3.1	BH	-11.6	-14.7		1561.8		-2310	-24	604,287	1,634,809	
667	1980		" "	"	11.1	-		-11.1		1565.4		-1980	-21	604,617	1,634,812	
668	1650		" "	"	9.4	-		-9.4		1567.1		-1650	-17	604,947	1,634,816	
669	1320		" "	"	9.6	-		-9.6		1566.9		-1320	-14	605,277	1,634,819	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY			LINE NO.		PAGE			
4/17/79		S. C. and		L. H. and		6834		W. Kral			2		50			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Oklahoma		Lone Wolf/Hobart		Oklahoma		Kiowa		6 N		19 W				L. O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS		
												NORTH + SOUTH -	EAST + WEST -		Y	X
									1576.5							
670	990		169°36'	+11.0°	8.9	-	-8.9			1567.6		-990	-10	605,607	1,634,823	
671	660		" "	"	7.4	-	-7.4			1569.1		-660	-7	605,937	1,634,826	
672	330		" "	"	6.7	-	-6.7			1569.8		-330	-3	606,267	1,634,830	
673	0				5.4	-	-5.4			1571.1	X	0	0	606,597	1,634,833	
674	330		349°37.7'	+11.0°	3.5	-	-3.5			1573.0		+330	+4	606,927	1,634,837	
675	660		" "	"	2.9	-	-2.9			1573.6		+660	+7	607,257	1,634,840	607495+1,634,830(s)
##	907		349°12.5'	+11.0°	3.0	TH	+4.5	+1.5		1578.0		+907	+3	607,504	1,634,836	4-way Intersect
676	990		349°37.7'	+11.0°	3.9	TH	+5.0	+1.1		1577.6		+990	+11	607,587	1,634,844	Route 44
##	1050		349°17'	+11.0°	0.2	TH	+5.3	+5.1		1581.6		+1050	+5	607,647	1,634,838	railroad
677	1320		349°37.7'	+11.0°	7.8	89°30'	+11.5	+3.7		1580.2		+1320	+14	607,917	1,634,847	
678	1650		" "	"	9.1	89°30'	+14.4	+5.3		1581.8		+1650	+18	608,247	1,634,851	
679	1980		" "	"	10.8	89°30'	+17.3	+6.5		1583.0		+1980	+22	608,577	1,634,855	Lone Wolf Quad.
680	2310		" "	"	11.9	89°30'	+20.2	+8.3		1584.8		+2310	+25	608,907	1,634,858	Hobart Quad.
##	2595		349°26'	+11.0°	12.5	89°30'	+22.6	+10.1		1586.6		+2595	+20	609,192	1,634,853	609,200+1,634,850(s)
681	2640		349°37.7'	+11.0°	13.0	89°30'	+23.0	+10.0		1586.5	TP	+2640	+29	609,237	1,634,862	4-way Intersect.
681	2640				14.6	89°28'	+24.6	+10.0			TP					1587' elev.
	2640		169°34.6'+180°	+11.0°	4.1	BH	+13.2	+17.3			BS	+2640	+27			
	2640				14.1	90°04'	+3.1	+17.2	1603.7		BS					
682	2310		169°34.6'	+11.0°	4.0	BH	-11.6	-15.6		1588.1		-2310	-23	609,567	1,634,866	
683	1980		" "	"	4.6	BH	-9.9	-14.5		1589.2		-1980	-20	609,897	1,634,869	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/17/79	INSTRUMENT MAN G. Cotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6837	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 51
AREA Oklahoma	TOPO MAP Hobart 15'	STATE Oklahoma	COUNTY Kiowa	TWP 6 N	RANGE 19 W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1603.7							
684	1650		169° 34.6'	+11.0	13.6	-		-13.6		1590.1		-1650	-17	610,227	1,634,872	
685	1320		" "	"	11.5	-		-11.5		1592.2		-1320	-13	610,557	1,634,876	
686	990		" "	"	9.8	-		-9.8		1593.9		-990	-10	610,887	1,634,879	
687	660		" "	"	8.3	-		-8.3		1595.4		-660	-7	611,217	1,634,882	
688	330		" "	"	7.3	-		-7.3		1596.4		-330	-3	611,547	1,634,886	
689	0				5.4	-		-5.4		1598.3	X	0	0	611,877	1,634,889	
690	330		349° 47'	+11.0	2.9	-		-2.9		1600.8		+330	+5	612,207	1,634,894	
691	660		" "	"	3.9	TH	+3.3	-0.6		1603.1		+660	+9	612,537	1,634,898	
692	990		" "	"	3.1	TH	+5.0	+1.9		1605.6		+990	+14	612,867	1,634,903	
693	1320		" "	"	1.2	TH	+6.6	+5.4		1609.1		+1320	+18	613,197	1,634,907	
694	1650		" "	"	5.8	89°30'	+14.4	+8.6		1612.3		+1650	+23	613,527	1,634,912	
695	1980		" "	"	5.2	89°30'	+17.3	+12.1		1615.8		+1980	+27	613,857	1,634,916	
696	2310		" "	"	5.3	89°30'	+20.2	+14.9		1618.6		+2310	+32	614,187	1,634,921	614,480+1,634,920(s)
IF	2595		349° 32.8'	+11.0	2.8	89°30'	+22.6	+19.8		1623.5		+2595	+25	614,472	1,634,914	4-Way Intersect.
697	2640		349° 47'	+11.0	2.9	89°30'	+23.0	+20.1		1623.8	TP	+2640	+36	614,517	1,634,925	1623' elev.
697	2640				13.6	89°16'	+33.8	+20.2			TP					
	2310		170° 26' +180°	+11.0	+7.7	91° -	+40.3	+48.0	1671.9	+48.1	BS	+2309	+58			
	2310				+14.7	90°50'	+33.6	+48.3			BS					
698	1980		170° 26'	+11.0	10.1	91° -	-34.6	-44.7		1627.2		-1979	-50	614,847	1,634,933	
699	1650		" "	"	12.2	91° -	-28.8	-41.0		1630.9		-1649	-41	615,177	1,634,942	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/17/79	INSTRUMENT MAN S. Lotcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 52
AREA Oklahoma	TOPO MAP Hobart 15'	STATE Oklahoma	COUNTY Kiowa	TWP 6/7 N	RANGE 19 W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1671.9					
700	1320		170° 26'	+11°	13.2	91° -	-23.0	-36.2		1635.7		-1320	-33	615,506 1,634,950
701	990		" "	"	13.0	91° -	-17.3	-30.3		1641.6		-990	-25	615,836 1,634,958
702	660		" "	"	8.1	91° -	-11.5	-19.6		1652.3		-660	-17	616,166 1,634,966
703	330		" "	"	8.6	-		-8.6		1663.3		-330	-8	616,496 1,634,975
704	0				5.4	-		-5.4		1666.5	π	0	0	616,826 1,634,983
705	330		350° 15.3'	+11°	3.4	-		-3.4		1668.5		+330	+7	617,156 1,634,990
706	660		" "	"	2.6	-		-2.6		1669.3		+660	+14	617,486 1,634,997
707	990		" "	"	1.1	-		-1.1		1670.8		+990	+22	617,816 1,635,005
708	1320		" "	"	4.4	TH	+6.6	+2.2		1674.1		+1320	+29	618,146 1,635,012
709	1650		" "	"	0.9	TH	+8.3	+7.4		1679.3		+1650	+36	618,476 1,635,019
△	1665		348° 54'	+11°	6.2	89° 30'	+14.5	+8.3		1680.2		+1665	-3	618,491 1,634,980
710	1980		350° 15.3'	+10.6°	13.9	89° 30'	+17.3	+3.4	+3.3	1675.2	TP	+1980	+29	618,806 1,635,012
710	1980				8.3	89° 40'	+11.5	+3.2			TP			
	2640		170° 10.7' + 180°	+10.6°	+7.6	89° 30'	-23.0	+15.4	1659.7	-15.5	BS	+2640	+36	
	2640				+13.6	89° 22'	-29.2	-15.6			BS			
711	2310		170° 10.7'	+10.6°	1.7	TH	+11.6	+9.9		1669.6		-2310	-31	619,140 1,635,017
712	1980		" "		2.9	TH	+9.9	+7.0		1666.7		-1980	-27	619,470 1,635,021
IF	1970		170° 22.2'	+10.6°	2.5	TH	+9.9	+7.4		1667.1		-1970	-33	619,480 1,635,015
713	1650		170° 10.7'	+10.6°	3.9	TH	+8.3	+4.4		1664.1		-1650	-22	619,800 1,635,026
714	1320		" "	"	4.6	TH	+6.6	+2.0		1661.7		-1320	-18	620,130 1,635,030

↑
T 6N
619,485 + 1,635,035(s)
4-Way Intersect.
1667' elev.
T 7N

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN.		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/17/79		G. Cotcamp		K. L. Soy		5834		R. Hulsem		2		53		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		
Oklahoma		Hobart 15'		Oklahoma		Kiowa		7N		19W		L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1659.7					
715	990		170° 10.7'	+10.6°	0.6	-		-0.6		1659.1		-990	-13	620,460 1,635,035
#	870		170° 30'	"	1.6	-		-1.6		1658.1		-870	-17	620,580 1,635,031 railroad
716	660		170° 10.7'	+10.6°	4.8	-		-4.8		1654.9		-660	-9	620,790 1,635,039
717	330		" "	"	5.3	-		-5.3		1654.4		-330	-4	621,120 1,635,044
718	0				5.4	-		-5.4		1654.3	π	0	0	621,450 1,635,048
719	330		349° 53.8'	+10.3°	2.9	-		-2.9		1656.8		+330	+1	621,780 1,635,049
720	660		" "	"	2.5	-		-2.5		1657.2		+660	+2	622,110 1,635,050
721	990		" "	"	7.0	-		-7.0		1652.7		+990	+3	622,440 1,635,051
722	1320		" "	"	10.1	-		-10.1		1649.6		+1320	+5	622,770 1,635,053
723	1650		" "	"	8.0	-		-8.0		1651.7		+1650	+6	623,100 1,635,054
724	1980		349° 53.8'	+10.3°	8.4	-		-8.4			TP	+1980.4	+7	623,434 1,635,055
724	1980				14.3	89° 50'	+5.8	-8.5		1651.2	TP			
	1650		170° 25' + 180°	+10.3°	+8.1	-		+8.1	1659.3		BS	+1650.4	+21	
	1650				+14.8	89° 46'	-6.7	+8.1			ES			
725	1320		170° 25'	+10.3°	13.9	04	-6.6	-20.5		1638.8		-1320	-17	623,768 1,635,059
726	990		" "	"	13.9	02	-17.3	-28.2		1631.1		-990	-12	624,098 1,635,064
727	660		" "	"	13.0	04	-3.3	-16.3		1643.0		-660	-8	624,428 1,635,068
728	330		" "	"	6.3	-		-6.3		1653.0		-330	-4	624,758 1,635,072
#	322		171° 52.5'	+10.3°	6.3	-		-6.3		1653.0		-322	-12	624,766 1,635,064 T-rd (west) 1653' elev.
729	0				5.4	-		-5.4		1653.9	π	0	0	625,088 1,635,076 (new road offset 29')

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
4/17/79		G. Cotcamp		R. Hulsey		6234		R. Hulsey		2		54				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
Oklahoma		Hobart 15'		Oklahoma		Kiowa		7 N		19 W				L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS
														Y	X	
									1659.3							
730	330		350° 25.6'	+103°	10.3	-		-10.3		1649.0		+330	+4	625,418	1,635,080	
731	660		" "	"	13.3	BH	-3.3	-16.6		1642.7		+660	+8	625,748	1,635,084	
732	990		" "	"	9.3	90° 42'	-11.5	-20.8		1638.5		+990	+13	626,078	1,635,089	
733	1320		350° 25.6'	+103°	8.7	91° -	-23.0	-31.7		1627.6	TF	+1320	+17	626,408	1,635,093	
733	1620				14.1	90° 46'	-17.7	-31.8			TF					
	1780		170° 38' + 180°	+103°	+10.3	89° -	-34.6	-24.3	1603.3		FS	+1980	+32			
	1780				+4.5	89° 10'	-28.8	-24.3			FS					
734	1650		170° 38'	+103°	12.9	89° -	+28.8	+15.9		1619.2		-1650	-27	626,738	1,635,098	
735	1320		" "	"	3.7	89° 30'	+11.5	+7.8		1611.1		-1320	-22	627,068	1,635,103	
736	990		" "	"	3.5	TH	+5.0	+1.5		1604.8		-990	-16	627,398	1,635,109	
737	660		" "	"	2.0	-		-2.0		1601.3		-660	-11	627,728	1,635,114	
738	330		" "	"	2.8	-		-2.8		1600.5		-330	-5	628,058	1,635,120	
739	0				5.4	-		-5.4		1597.9	π	0	0	628,388	1,635,125	
740	330		350° 25.6'	+103°	13.0	BH	-1.7	-14.7		1588.6		+330	+4	628,718	1,635,129	
741	660		" "	"	11.7	91° -	-11.5	-23.2		1580.1		+660	+8	629,048	1,635,133	
742	990		" "	"	5.3	91° -	-17.3	-22.6		1580.7		+990	+12	629,378	1,635,137	
743	1320		" "	"	8.3	BH	-6.6	-14.9		1588.4		+1320	+15	629,708	1,635,140	
744	1650		" "	"	5.8	-		-5.8		1597.5		+1650	+19	630,038	1,635,144	630,065 + 1,635,135(s)
IF	1680		350° 15.6'	+103°	5.4	-		-5.4		1597.9		+1680	+16	630,068	1,635,141	4-Way Intersect. 1598' elev.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE		
4/1/80		G. Co. Coef		R. Hulsey		6024		R. Hulsey		2		55		
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		
Oklahoma		Robert 15		Oklahoma		Kiowa		7N		19W		L.O. Davis		
STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1603.3					
745	1980		350° 22.3'	+10.6°	10.6	-		-10.6		1592.7	Tf	+1980.4	+34	630,372 1,635,159
745	1980				14.2	89° 54'	+3.5	-10.7			Tf			
	1920		169° 54.3' +180°	+10.6°	-2.8	-		+2.8	1595.5		PC	+1980.4	+17	
	1980				-12.7	TH	-9.9	+2.8			PC			
746	1656		33° 54.3'	+10.6°	13.2	-		-13.2		1582.3		-1650	-15	630,706 1,635,161
747	1920		" "	"	9.8	BH	-6.6	-16.4		1579.1		-1320	-12	631,036 1,635,164
748	990		" "	"	11.5	BH	-5.0	-16.5		1579.0		-990	-9	631,366 1,635,167
749	660		" "	"	13.5	-		-13.5		1582.0		-660	-6	631,696 1,635,170
750	330		" "	"	6.6	-		-6.6		1588.9		-330	-3	632,026 1,635,173
751			" "	"	5.4	-		-5.4		1590.1	X	0	0	632,356 1,635,176
752	330		349° 47'	+10.6°	11.9	-		-11.9		1583.6		+330	+2	632,686 1,635,178
753	330		" "	"	11.9	BH	-3.3	-15.2		1580.3		+660	+4	633,016 1,635,180
754	990		" "	"	11.7	BH	-5.0	-16.7		1578.8		+990	+7	633,346 1,635,183
755	1320		" "	"	10.5	BH	-6.6	-17.1		1578.4		+1320	+9	633,676 1,635,185
756	1320		" "	"	9.1	BH	-8.3	-17.4		1578.1		+1650	+11	634,006 1,635,187
757	1980		349° 47'	+10.6°	14.3	-		-14.3		1581.2	Tf	+1980	+13	634,336 1,635,189
757	1980				4.4	BH	-9.9	-14.3			Tf			
	660		169° 35.2' +180°	+10.6°	+7.2	-		+7.2	1588.4		PC	+660	-2	
	660				+10.5	TH	-3.3	+7.2			CS			
758	330		169° 35.2'	+10.6°	5.8	-		-5.8		1582.1		-330	+1	634,666 1,635,189

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	INSTRUMENT MAN	ROD MAN	PARTY NUMBER	NOTES CHECKED BY	LINE NO.	PAGE
			3834	R. Hulsey	2	56
AREA	TOPO MAP	STATE	COUNTY	TWP	RANGE	PHM
		Nebraska	Franklin	7 N	19 W	
					PARTY MANAGER	
					S. Davis	

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH+	EAST+	COORDINATES		REMARKS
												SOUTH-	WEST-	Y	X	
												LAT.	DEP.			
									1588.4							
759	0				5.4	-		-5.4		1583.0	π	0	0	634,996	1,635,187	
760	330		350° 8.7'	+10.6°	3.3	-		-3.3		1585.1		+330	+4	635,326	1,635,191	635,375+1,635,190(s)
760	379		349° 9.3'	+10.6°	2.2	-		-2.2		1586.2		+379	-2	635,375	1,635,185	4-Way Intersect.
761	660		350° 8.7'	+10.6°	0.9	-		-0.9		1587.5	TP	+660	+9	635,656	1,635,196	y = +20' horiz. correct.
761	660				4.2	TH	+3.3	-0.9			TP					x = 0'
	660		169° 48.7' +180°	+10.6°	+10.6	91°	+11.5	+22.1	1609.6		BS	+660	+5			
	660				+14.8	90°38'	+7.3	+22.1			BS					
BM	1060		193° 21'	+10.6°	9.2	91°	-18.5	-27.7		1581.9		-969	-430	635,347	1,634,771	U.S.G.S. '10 CWR' 1959 El. 1582.5
762	330		169° 48.7'	+10.6°	13.1	-		-13.1		1596.5		-330	-2	635,986	1,635,199	
763	0				5.4	-		-5.4		1604.2	π	0	0	636,316	1,635,201	
764	330		350° 21.5'	+10.6°	2.2	-		-2.2		1607.4		+330	+6	636,646	1,635,207	
765	660		350° 21.5'	+10.6°	1.9	-		-1.9		1607.7	TP	+660	+11	636,976	1,635,212	
765	660				5.2	TH	+3.3	-1.9			TP					
	2640		170° 21.2' +180°	+10.6°	-8.0	TH	-13.2	-5.2	1602.5		BS	+2640	+44			
	2640				-14.7	89°34'	-20.0	-5.3			BS					
766	2310		170° 21.2'	+10.6°	6.3	TH	+11.6	+5.3		1607.8		-2310	-38	637,306	1,635,218	
767	1980		" "	"	4.5	TH	+9.9	+5.4		1607.9		-1980	-33	637,636	1,635,223	
768	1650		" "	"	3.5	TH	+8.3	+4.8		1607.3		-1650	-27	637,966	1,635,229	
769	1320		" "	"	2.2	TH	+6.6	+4.4		1606.9		-1320	-22	638,296	1,635,234	
770	990		" "	"	1.3	TH	+5.0	+3.7		1606.2		-990	-16	638,626	1,635,240	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 4/24/79	INSTRUMENT MAN G. Coitcamp	ROD MAN R. Hulsey	PARTY NUMBER 6834	NOTES CHECKED BY R. Hulsey	LINE NO. 2	PAGE 57 of 57
AREA Oklahoma	TOPO MAP Hubart 15'	STATE Oklahoma	COUNTY Kiowa	TWP 7 N	RANGE 19 W	PPM
				PARTY MANAGER L.O. Davis		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1602.5					
771	660		170° 21.2'	+10.6°	1.8	TH	+3.3	+1.5		1604.0		-660	-11	638,956 1,635,245
772	330		" "	"	1.8	TH	+1.7	-0.1		1602.4		-330	-5	639,286 1,635,251
773	0				5.4	-		-5.4		1597.1	TP	0	0	639,616 1,635,256
774	330		350° 31.3'	+10.6°	13.0	BH	-1.7	-14.7		1587.8		+330	+6	639,946 1,635,262
775	660		" "	"	12.7	BH	-3.3	-16.0		1586.5		+660	+13	640,276 1,635,269
776	990		" "	"	9.3	BH	-5.0	-14.3		1588.2		+990	+19	640,606 1,635,275
777	1058		350° 13'	+10.6°	13.6	-		-13.6		1588.9		+1058	+15	640,674 1,635,271
777	1320		350° 31.3'	+10.6°	9.6	-		-9.6		1592.9		+1320	+26	640,936 1,635,282
778	1650		" "	"	9.1	-		-9.1		1593.4		+1650	+32	641,266 1,635,288
779	1980		" "	"	7.2	-		-7.2		1595.3		+1980	+39	641,596 1,635,295
780	2310		" "	"	0.7	-		-0.7		1601.8		+2310	+45	641,926 1,635,301
781	2640		350° 31.3'	+10.6°	2.0	-		-2.0		1600.4	TP	+2639	+52	641,255 1,635,308
781	2640				14.5	89° 44'	+12.3	-2.2			TP			
	1980		170° 23' + 180°	+10.6°	+5.8	90° 40'	+23.0	+28.8		1629.2	BS	+1980	+34	
	1980				+13.8	90° 26'	+15.0	+28.8			BS			
782	1650		170° 23'	+10.6°	8.0	90° 40'	-19.2	-27.2		1602.0		-1650	-28	642,585 1,635,314
783	1320		" "	"	8.0	90° 40'	-15.4	-23.4		1605.8		-1320	-23	642,915 1,635,319
784	990		" "	"	6.1	90° 40'	-11.5	-17.6		1611.6		-990	-17	643,245 1,635,325
785	660		" "	"	10.9	BH	-3.3	-14.2		1615.0		-660	-11	643,575 1,635,331
786	330		" "	"	10.5	-		-10.5		1618.7		-330	-6	643,905 1,635,336

Note: line cut
E.O.L.
short due to permit
problem.
640,685 + 1,635,275(s)
4" by 2" instrument.
El. 1589

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc. Client: **COCORP**

DATE 9/21/80	INSTRUMENT MAN G. Cotcamp	ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY GHL	LINE NO. 2-A	PAGE 1 OF 31
AREA OKLAHOMA II	TOPO MAP Hobart 15'	STATE Oklahoma	COUNTY Kiowa	TWP 6N	RANGE 19W	PPM
PARTY MANAGER L. O. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
#				9°18'						1417.0			614,580	1,629,670	614,580 + 1,629,670
	2145		171°49.4' + 180°	+9.3°	+6.2	90°40'	+24.9	+31.1			BS	+2195+2	+39-2		4-way Intersect. el. 1617.
	2145				+14.8	90°20'	+14.2	+31.0	1648.0		BS				
1	1980		171°32'	+9.3°	12.0	90°30'	-17.3	-29.3		1618.7		-1980	-29	614,797	1,629,648
2	1650		"	"	12.2	90°30'	-14.4	-26.6		1621.4		-1650	-29	615,077	1,629,653
3	1320		"	"	10.3	90°30'	-11.5	-21.8		1626.2		-1320	-19	615,407	1,629,658
4	990		"	"	9.4	90°30'	-8.6	-18.0		1630.0		-990	-14	615,737	1,629,663
5	660		"	"	10.9	84	-3.3	-14.2		1633.8		-660	-10	616,067	1,629,667
6	330		"	"	9.5	-	-	-9.5		1638.5		-330	-5	616,397	1,629,672
7	0		"	"	5.4	-	-	-5.4		1642.6	X	0	0	616,727	1,629,677
8	330		351°57.1'	+9.3°	0.2	-	-	-0.2		1647.8		+330	+7	617,057	1,629,687
9	660		"	"	5.0	89°-	+11.5	+6.5		1659.5		+660	+19	617,387	1,629,691
10	990		"	"	0.9	89°-	+17.3	+16.4		1664.4		+990	+22	617,717	1,629,699
11	1320		"	"	9.4	88°30'	+34.5	+25.1		1673.1		+1320	+29	618,047	1,629,706
12	1650		"	"	2.0	88°30'	+43.2	+41.2		1689.2		+1650	+36	618,377	1,629,713
13	1980		"	"	6.5	88°10'	+63.3	+56.8		1704.8		+1980	+43	618,707	1,629,720
14	2310	2309	351°57.1'	+9.3°	11.3	88°10'	+73.9	+62.6		1710.6	TP	+2308+2	+50-2	619,037	1,629,725
14	2310		"	"	14.0	88°6'	+76.6	+62.6			TP				
	2310		171°10.3' + 180°	+9.3°	+9.6	89°-	-40.3	-38.7	1679.9		BS	+2310+2	+19-2		
	2310		"	"	+5.6	89°6'	-36.3	-30.7			BS				
15	1980		171°10.3'	+9.3°	5.2	89°	-31.6	+29.0		1709.3		-1980	-16	619,369	1,629,726

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.




DATE	9/21/80	INSTRUMENT MAN	G. Cutcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6837	NOTES CHECKED BY	slw	LINE NO.	2-A	PAGE	2	
AREA	Oklahoma	TOPO MAP	Hubert 15'	STATE	Oklahoma	COUNTY	Kiowa	TWP	7N	RANGE	19W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS	
												LAT.	DEP.	Y	X				
									1679.9										
15	1786		171° 25.7'	+9.3°	5.2	89° -	+31.2	+26.0		1705.9		-1786	-23	619,563	1,629,719			619,580 + 1,629,700 4-Way Intersect. e11707	
16	1650		171° 10.3'	+9.5°	6.0	89° -	+28.8	+22.8		1702.7		-1650	-19	619,699	1,629,723				
17	1320		" "	"	7.1	89° -	+23.0	+15.9		1695.8		-1320	-15	620,029	1,629,727				
18	990		" "	"	9.9	89° -	+17.3	+7.4		1692.3		-990	-12	620,359	1,629,730				
19	660		" "	"	0.3	-	-	-0.3		1679.6		-660	-8	620,689	1,629,734				
20	330		" "	"	4.1	-	-	-4.1		1675.8		-330	-4	621,019	1,629,738				
21	0		" "	"	5.9	-	-	-5.4		1674.5	TP	0	0	621,349	1,629,742				
22	330		251° 10.3'	+9.5°	4.5	-	-	-4.5		1675.4		+330	+9	621,679	1,629,746				
23	660		" "	"	12.4	-	-	-12.4		1667.5		+660	+8	622,009	1,629,750				
24	990		" "	"	9.9	BH	5.0	-17.9		11,65.0		+990	+12	622,339	1,629,754				
25	1320		" "	"	8.4	-	-	-8.4		1671.5		+1320	+15	622,669	1,629,757				
26	1650		251° 10.3'	+9.5°	12.4	-	-	-12.4		1667.5	TP	+650	+19	622,999	1,629,761				
26	1650		" "	"	4.2	BH	-8.3	-12.5			TP								
	2640	2639	171° 16.3' + 180°	+9.5°	+10.5	88° 40'	-61.4	-50.9	1616.6		BS	+2639	+36						
	2640		" "	"	+13.6	88° 26'	-64.5	-50.9			BS								
27	2310		171° 12.3'	+9.5°	9.0	88° 46'	+49.7	+40.7		1657.3		-2310	-31	623,328	1,629,766				
28	1980		" "	"	2.7	88° 46'	+42.6	+39.9		1656.5		-1980	-27	623,658	1,629,770				
29	1650		" "	"	4.1	88° 50'	+33.6	+29.5		1446.1		-1650	-22	623,988	1,629,775				
30	1320		" "	"	6.9	89° -	+23.0	+16.1		1632.7		-1320	-18	624,318	1,629,779				
31	990		" "	"	2.3	TH	+51.0	+2.7		1619.3		-990	-13	624,248	1,629,784				

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE				
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER		
STATION NO.	 SLOPE DISTANCE	 PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	 VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES Y X		REMARKS
									1616.6							
17	715		171°28.3'	+9.5°	2.7	TH	+3.6	+0.7		1617.5		-715	-12	624,923	1,629,785	624,925+1,629,795 (-id' east) el 1617
32	660		171°16.3'	+9.8°	2.9	TH	+3.3	+0.5		1617.1		-660	-12	624,978	1,629,785	
33	330		"	"	0.7	TH	+1.7	+1.0		1617.4		-330	-6	625,308	1,629,791	
34	0				5.4	-		-5.4		1611.2	X	0	0	625,638	1,629,797	
35	330		351°10'	+9.8°	4.4	-		-4.4		1612.2		+330	+6	625,968	1,629,803	
36	660		"	"	9.8	-		-9.8		1606.8		+660	+11	626,298	1,629,808	
37	990		"	"	2.8	-		-2.8		1613.8		+990	+17	626,628	1,629,814	
38	1320		"	"	0.6	TH	+6.6	+6.0		1622.4		+1320	+22	626,958	1,629,819	
39	1650		"	"	4.9	89°30'	+14.4	+9.5		1626.1		+1650	+28	627,288	1,629,825	
40	1980		"	"	5.0	89°20'	+23.0	+18.0		1634.6		+1980	+33	627,618	1,629,830	
41	2310		351°10'	+9.8°	7.5	89°20'	+26.9	+19.4		1636.0	TP	+2310	+37	627,948	1,629,836	
41	2310				4.7	89°24'	+24.2	+19.5			TP					
	1650		170°48.7+180°	+9.8°	+9.5	BH	+8.3	+17.8			BS	+1650	+18			
	1650				+12.7	90°10'	+4.8	+17.5	1653.5		BS					
42	1320		170°48.7	+9.8°	3.7	91°-	-23.0	-26.7		1626.8		-1320	-14	628,278	1,629,840	
43	990		"	"	3.8	91°-	-17.3	-21.1		1632.4		-990	-11	628,608	1,629,843	
44	660		"	"	12.9	90°30'	-5.8	-18.2		1635.3		-660	-7	628,938	1,629,847	
45	330		"	"	10.6	-		-10.6		1642.9		-330	-4	629,268	1,629,850	
46	0				5.4	-		-5.4		1648.1	X	0	0	629,598	1,629,854	
47	330		350°20.3'	+9.8°	7.2	-		-7.2		1646.3		+330	+1	629,928	1,629,855	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
9/21/80		G. Cotcamp		G. Litzinger		6834		SW		2-A	4						
AREA		TOPO MAP	STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER								
Oklaoma		2000'	Oklaoma	Siowa		7N	19W		L. Lewis								
STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
JL 7F	600		350°20.3'	+9.8°	11.5	-		-11.5	1653.5								
48	660		350°37.2'	+10.0°	10.8	BH	-3.3	-14.1		1642.0		+600	+1	630,198	1,629,853	630,155+1,629,870 4 way cl 1643	
49	990		" "	"	4.0	91°-	-17.3	-21.3		1639.4		+660	+7	630,258	1,629,861		
50	1320		" "	"	5.1	91°-	-23.0	-28.1		1632.2		+990	+11	630,588	1,629,865		
51	1650		" "	"	3.7	91°-	-28.8	-32.5		1625.4		+1320	+14	630,918	1,629,868		
52	1980		350°37.2'	+10°	1.3	91°-	-24.6	-35.9		1621.0		+1650	+18	631,248	1,629,872		
52	1080		" "	"	12.9	90°40'	-23.0	-35.9		1617.4	if	+1980	+21	631,578	1,629,875		
	2640		170°38'+180°	+10°	+9.8	TH	-13.2	-4.4	1613.2		if	+2640	+29				
	2640		" "	"	+14.0	89°36'	-18.4	-4.4			if						
53	2310		170°38'	+10°	9.0	TH	+11.6	+2.6		1615.8		-2310	-26	631,908	1,629,878		
54	1980		" "	"	9.2	TH	+9.9	+0.7		1613.9		-1980	-22	632,238	1,629,882		
55	1650		" "	"	7.7	TH	+8.3	+0.6		1613.8		-1650	-18	632,568	1,629,884		
56	1320		" "	"	0.5	-		-0.5		1612.7		-1320	-15	632,898	1,629,889		
57	990		" "	"	2.0	-		-2.0		1611.2		-990	-11	633,228	1,629,893		
58	660		" "	"	5.8	-		-5.8		1607.4		-660	-7	633,558	1,629,897		
59	330		" "	"	4.9	-		-4.9		1608.3		-330	-4	633,888	1,629,900		
60	0		" "	"	5.4	-		-5.4		1607.8	if	0	0	634,218	1,629,904		
61	330		350°45.8'	+10°	11.1	-		-11.1		1602.1		+330	+4	634,548	1,629,908		
62	660		" "	"	11.2	BH	-3.3	-14.5		1598.7		+660	+9	634,878	1,629,913		
63	990		" "	"	10.7	BH	-5.0	-15.7		1597.5		+990	+13	635,208	1,629,917		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 9/21/80	INSTRUMENT MAN G Cotcamp	ROD MAN G Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY shl rlw	LINE NO. 2-A	PAGE 5
AREA Oklahoma	TOPO MAP Hobart 15'	STATE Oklahoma	COUNTY Kiowa	TWP 7N	RANGE 19 W	PPM
PARTY MANAGER L. Davis						

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1613.2					
64	1265		350°29.2'	+10°	7.6	BH	-6.3	-15.9		1597.3		+1265	+9	635,483 1629,913
64	1320		350°45.8'	+10°	9.2	BH	-6.6	-15.8		1597.4		+1320	+18	635,538 1629,922
65	1650		"	"	12.9	-		-12.4		1600.8		+1650	+22	635,868 1629,926
66	1980		"	"	12.2	-		-12.2		1601.0		+1980	+26	636,198 1629,930
67	2310		"	"	34	BH	-11.6	-15.0		1598.2		+2310	+31	636,528 1629,935
68	2640		350°45.8'	+10°	27	BH	-13.2	-16.1		1597.1	TP	+2640	+35	636,858 1629,939
68	2640				12.9	90°9'	-3.1	-16.0			TP			
	2640		170°50.4' +180°	+10°	+8.5	BH	+13.2	+21.7	1618.8		BS	+2640	+39	
	2640				+13.9	90°16'	+7.7	+21.6			BS			
69	2310		170°50.4'	+10°	10.0	BH	-11.4	-21.6		1597.2		-2310	-37	637,188 1629,949
70	1980		"	"	10.3	BH	-9.9	-20.2		1598.4		-1980	-29	637,518 1629,979
71	1650		"	"	10.3	BH	-8.3	-18.6		1400.2		-1650	-27	637,848 1629,959
72	1320		"	"	8.1	BH	-6.6	-14.7		1604.1		-1320	-19	638,178 1629,959
73	990		"	"	10.7	-		-10.7		1608.1		-990	-15	638,508 1629,963
74	660		"	"	8.0	-		-8.0		1610.8		-660	-10	638,838 1629,968
75	330		"	"	3.6	-		-3.6		1615.2		-330	-5	639,168 1629,973
76	0		"	"	5.4	-		-5.4		1613.4	TP	0	0	639,498 1629,978
77	330		351°13'	+10°	3.3	-		-3.3		1415.5		+330	+6	639,828 1629,984
78	660		"	"	1.8	TH	+3.3	+16.5		1620.3		+660	+12	640,158 1629,990
79	990		"	"	10.0	89°-	+17.3	+7.3		1626.1		+990	+18	640,488 1629,996

635,500 + 1629,975
4-Way Intersect. c.1597

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	7/21/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6837	NOTES CHECKED BY	slw	LINE NO.	2-A	PAGE	6	
AREA	Oklahoma	TOPO MAP	Hobart 15'	STATE	Oklahoma	COUNTY	Kiowa	TWP	7N	RANGE	19W	PPM	PARTY MANAGER	L Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS		
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y	X
									1418.8					horiz. correct y = +6' x = -6'		
77	1302		350° 57.7'	+10°	12.5	89° -	+22.7	+10.2		1629.0		+1302	+22	690,800	1,630,000	4-Way Intersect. CL 1629
80	1320		351° 1.3'	+10°	12.7	89° -	+23.0	+10.3		1629.1		+1320	+24	690,818	1,630,002	
81	1650		" "	"	7.3	89° 20'	+19.2	+11.9		1630.7		+1650	+29	691,198	1,630,007	
82	1980		" "	"	10.0	89° 20'	+23.0	+13.0		1631.8		+1980	+35	691,798	1,630,013	
83	2310		" "	"	11.1	89° 20'	+26.9	+15.8		1634.6		+2310	+41	691,808	1,630,017	
84	2640		351° 1.3'	+10°	13.0	89° 20'	+30.7	+17.7		1636.5	TP	+2640-5	+47 +1	642,133	1,630,026	
84	2640		" "	"	9.8	89° 27'	+27.6	+17.8			TP					
	2640		170° 33.4' + 180°	+10°	+15.0	91° -	+46.1	+61.1	+61.3		BS	+2640-5	+26 +1			
	2640		" "	"	+13.8	91° 2'	+47.6	+61.4	1497.8		BS					
85	2310		170° 33.4'	+10°	16.0	91° -	-40.3	-56.3		1641.5		-2310	-22	692,958	1,630,031	
86	1980		" "	"	18.8	91° -	-34.6	-53.4		1644.4		-1980	-19	692,788	1,630,034	
87	1650		" "	"	12.1	91° -	-28.8	-40.9		1656.9		-1650	-14	643,118	1,630,037	
88	1320		" "	"	7.0	91° -	-23.0	-30.0		1667.8		-1320	-13	693,448	1,630,040	
89	990		" "	"	10.2	90° 30'	-8.6	-18.8		1679.0		-990	-10	643,778	1,630,043	
90	660		" "	"	9.9	90° 30'	-5.8	-15.7		1692.1		-660	-6	694,108	1,630,047	
91	330		" "	"	12.0	-	-	-12.0		1685.8		-330	-3	644,438	1,630,050	
92	0		" "	"	5.4	-	-	-5.4		1692.4	π	0	0	644,768	1,630,053	
93	330		350° 53.2'	+10°	8.8	-	-	-8.8		1689.0		+330	+5	645,098	1,630,058	
94	660		" "	"	5.8	91° -	-11.5	-17.3		1680.5		+660	+10	645,428	1,630,063	
95	990		" "	"	8.0	91° -	-17.3	-25.3		1672.5		+990	+15	645,758	1,630,068	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
9/21/80		G. Cotcamp		G. Litzinger		6837		G.W.C. <i>elw</i>		2-A	7					
AREA		TOPO MAP	STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER								
Oklahoma		Hobart 15'	Oklahoma	Kiowa	7N	19W		L. Davis								
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
IL 7F	1275		350° 38'	+10°	8.5	91° -	-22.2	-30.7		1467.1		+1275	+14	646,093	1,630,067	646,065 + 1,630,065 4-Way Intersect. 1667
96	1320		350° 53.2'	+10°	9.3	91° -	-23.0	-32.3		1665.5		+1320	+20	646,088	1,630,073	
97	1650		350° 53.2'	+10°	8.1	91° -	-28.8	-36.9		1660.9	TP	+1650-5	+26+1	646,413	1,630,080	
97	1650				13.9	90° 48'	-23.0	-36.9			TP					
	2640		170° 15.2' + 140	+10°	+2.2	89° 40'	-15.4	-13.2	1647.7		BS	+2640-5	+12+1			
	2640				+9.7	89° 30'	-23.0	-13.3			BS					
98	2310		170° 15.2'	+10°	6.9	89° 30'	+20.2	+13.3		1661.0		-2310	-10	646,738	1,630,083	
99	1980		"	"	6.4	89° 30'	+17.3	+10.9		1658.6		-1980	-9	647,068	1,630,084	
100	1650		"	"	2.4	TH	+8.3	+5.9		1653.6		-1650	-7	647,398	1,630,086	
101	1320		"	"	4.2	TH	+6.6	+2.4		1650.1		-1320	-6	647,728	1,630,087	
102	990		"	"	5.8	TH	+5.0	-0.8		1646.9		-990	-4	648,058	1,630,089	
103	660		"	"	2.5	-	-	-2.5		1645.2		-660	-3	648,388	1,630,090	
104	330		"	"	3.9	-	-	-3.9		1643.8		-330	-1	648,718	1,630,092	
105	0		"	"	5.4	-	-	-5.4		1642.3	TP	0	0	649,048	1,630,093	
106	330		350° 23.2'	+10°	7.5	-	-	-7.5		1640.2		+330	+2	649,378	1,630,095	
107	640		"	"	12.3	BH	-3.3	-15.6		1632.1		+640	+4	649,708	1,630,097	
108	990		"	"	9.7	BH	-5.0	-14.7		1633.0		+990	+7	650,038	1,630,100	
109	1320		"	"	9.7	-	-	-9.7		1638.0		+1320	+9	650,368	1,630,102	
110	1650		"	"	8.1	-	-	-8.1		1639.6		+1650	+11	650,698	1,630,104	
111	1980		"	"	5.8	-	-	-5.8		1641.9		+1980	+13	651,028	1,630,106	Kiowa Co.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
7/22/80		GLITZINGER		G Colcamp		6834		GWC. <i>slw</i>		2-A	8						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
OKLAHOMA		Hobart 15'		Oklahoma	Washita		8N	19W		DAVIS							
STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1647.7								
111	2250		350° 7.6'	+10°	3.3	-		-3.3		1644.4		+2250	+5	651,298	1,630,098	651,275 + 1,630,110 A way Intersect. el 1642.	
112	2310		350° 23.2'	+10°	3.5	-		-3.5		1644.2		+2310	+16	651,358	1,630,109	Washita Co.	
113	2640		350° 23.2'	+10°	10.7	89° 50'	+7.7	-3.0		1644.7	TP	+2640-5	+18+1	651,683	1,630,112	↓	
113	2640				6.1	89° 56'	+3.1	-3.0			TP						
	2310		170° 42.8' +180°	+10°	+5.3	90° 20'	+13.4	+18.7	1663.4		BS	+2310-5	+29+1				
	2310				+11.9	90° 10'	+6.7	+18.6			BS						
114	1980		170° 42.8'	+10°	6.1	BH	-9.9	-16.0		1647.4		-1980	-25	652,008	1,630,117		
115	1650		"	"	5.7	BH	-8.3	-14.0		1649.4		-1650	-21	652,338	1,630,121		
116	1320		"	"	11.5	-		-11.5		1651.9		-1320	-16	652,668	1,630,126		
117	990		"	"	10.0	-		-10.0		1653.4		-990	-12	652,998	1,630,130		
118	660		"	"	9.8	BH	-3.3	-13.1		1650.3		-660	-8	653,328	1,630,134		
119	330		"	"	7.8	-		-7.8		1655.6		-330	-4	653,658	1,630,138		
120	0				5.4	-		-5.4		1658.0	TP	0	0	653,988	1,630,142		
121	330		350° 44.4'	+10°	6.7	-		-6.7		1656.7		+330	+4	654,318	1,630,146		
122	660		"	"	8.4	-		-8.4		1655.0		+660	+9	654,648	1,630,151		
123	990		"	"	10.1	-		-10.1		1653.3		+990	+13	654,978	1,630,155		
124	1320		"	"	12.2	-		-12.2		1651.2		+1320	+17	655,308	1,630,159		
125	1650		350° 44.4'	+10°	9.8	BH	-8.3	-18.1	-17.9	1645.5	TP	+1650-5	+21+2	655,633	1,630,165		
125	1650				13.0	90° 10'	-48	-17.8			TP						

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 9/22/80	INSTRUMENT MAN G LITZINGER		ROD MAN G GOTCAMP		PARTY NUMBER 6834		NOTES CHECKED BY G.W.C. <i>alw</i>		LINE NO. 2-A	PAGE 9
AREA Oklahoma	TOPO MAP Hobart 15' Retro	STATE 5 Oklahoma	COUNTY Washita		TWP 8N	RANGE 19W	PPM	PARTY MANAGER DAVIS		

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
125										1645.5				
	660		171° 17' +180	+10°	+7.6	89° -	-11.5	-3.9	1641.6		BS	+660 -5	+15 +2	
	660				+5.7	89° 10'	-9.6	-3.9		BS				
126	330		171° 17'	+10°	3.0	-		-3.0		1638.6		-330	-7	656,958 / 1,630,175
127	0				5.4	-		-5.4		1636.2	T	0	0	656,288 / 1,630,182
T	274		349° 23.7'	+10°	6.6	-		-6.6		1635.0		+274 -4	-3 +1	656,560 / 1,630,180
														1 mile offset west between 127 and 128.
JL T										1624.0	T			656,600 / 1,625,040
	2034		171° 12.2' +180°	+10°	+2.9	TH	-10.2	-7.3	1616.7		BS	+2034	+43	4-way Intersect. el. 1624.
	2034				+8.8	89° 30'	5.9	+2.9			BS			misc'd angle G.L.
128	1980		170° 57.2'	+10°	4.7	TH	+9.9	+5.2		1621.9		-1980	-33	656,654 / 1,625,050
129	1650		"	"	7.2	TH	+8.3	+1.1		1617.8		-1650	-27	656,984 / 1,625,056
130	1320		"	"	7.6	TH	+6.6	-1.0		1615.7		-1320	-22	657,314 / 1,625,061
131	990		"	"	4.1	-		-4.1		1612.6		-990	-14	657,644 / 1,625,067
132	660		"	"	3.9	-		-3.9		1612.8		-660	-11	657,974 / 1,625,072
133	330		"	"	3.6	-		-3.6		1613.1		-330	-5	658,304 / 1,625,078
J	143		175° 49.7'	+10°	2.1	-		-2.1		1614.6		-142	-15	658,492 / 1,625,068
134	0				5.4	-		-5.4		1611.3	T	0	0	658,634 / 1,625,083
135	330		350° 40.9'	+10°	4.5	-		-4.5		1612.2		+330	+4	658,964 / 1,625,087
136	660		"	"	5.2	-		-5.2		1611.5		+660	+8	659,294 / 1,625,091

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 9/22/80	INSTRUMENT MAN G LITZINGER	ROD MAN G Colecamp	PARTY NUMBER 4834	NOTES CHECKED BY GWC. jlw	LINE NO. 2-A	PAGE 10
AREA Oklahoma	TOPO MAP Hobart 15'-Retrop	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 19W	PPM
PARTY MANAGER DAVIS						

STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1616.7					
137	990		350° 40.7'	+10°	3.4	-		-3.4		1613.3		+ 990	+12	659,624 1,625,095
138	1320		"	"	5.1	TH	+6.6	+1.5		1618.2		+1320	+16	659,954 1,625,099
139	1650		"	"	2.0	89° 30'	+14.4	+12.4		1629.1		+1650	+20	660,284 1,625,103
140	1980		350° 40.9'	+10°	4.5	89° 20'	+23.0	+18.5	118.6	1635.3	TP	+1980	+24	660,614 1,625,107
140	1980				10.1	89° 10'	+28.8	+18.7			TP			
	660		170° 44.6' +150	+10°	+4.1	-		+4.1	1639.4		BS	+660	+9	
	660				+7.4	TH	-3.3	+4.1			BS			
141	330		170° 49.6"	+10°	4.0	-		-4.0		1635.4		-330	-4	660,944 1,625,112
142	0				5.4	-		-5.4		1634.0	T	0	0	661,274 1,625,116
143	330		350° 39.3'	+10°	5.7	-		-5.7		1633.7		+330	+4	661,604 1,625,120
14	630		349° 51.1'	+10°	4.5	-		-4.5		1634.9		+630	-2	661,904 1,625,114
														Retrop Quad. Line #5 661,905 + 1,625,115 T-intersect. el. 1635
														1 mile offset east
														between 143 + 144.
<u>14</u>										1601.0	R			661,830 1,630,220
	2670		171° 26.2' +150	+10°	+6.2	90° 50'	+38.8	+45.0			BS	+2670	+67	
	2670		170° 20.3'		+13.8	90° 40'	+31.1	+44.9	1645.9		BS			Hobart Quad.
144	2640		170° 20.3'	+10°	6.3	90° 60'	-38.4	-44.7		1601.2		-2640	-16	661,856 1,630,271
145	2310		"	"	12.5	90° 40'	-26.9	-39.4		1606.5		-2310	-14	662,186 1,630,273
146	1980		"	"	9.5	90° 40'	-23.0	-32.5		1613.4		-1980	-12	662,516 1,630,275
147	1660		"	"	10.1	90° 40'	-19.2	-29.3		1616.6		-1650	-10	662,846 1,630,277

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
9/22/80		G. LITZINGER		G. Lotcamp		6834		Gwl. <i>rdw</i>		7-A	11					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Hobart		OKLAHOMA	Washita		8 N	19 W		DAVIS						
STATION NO.	SLOPE DISTANCE	PLOTting DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS
												LAT.	DEP.	Y	X	
									1645.9							
148	1320		170° 20.3'	+10°	12.0	90° 40'	-15.4	-27.4		1618.5		-1320	-8	663,176	1,630,279	
149	990		"		11.5	90° 40'	-11.5	-23.0		1622.9		-990	-6	663,506	1,630,281	
150	660		"		9.7	90° 40'	-7.7	-17.0		1628.9		-660	-4	663,836	1,630,283	
151	330		"		7.3	—	—	-7.3		1638.6		-330	-2	664,166	1,630,285	
152	0		"		5.4	—	—	-5.4		1640.5		0	0	664,496	1,630,287	
153	330		351° 15.2'	+10°	6.2	—	—	-6.2		1639.7		+330	+7	664,826	1,630,294	
154	660		"		9.6	—	—	-9.6		1636.3		+660	+14	665,156	1,630,301	
155	990		"		8.2	BH	-5.0	-13.2		1632.7		+990	+22	665,486	1,630,309	
156	1320		"		8.5	BH	-6.6	-15.1		1630.8		+1320	+29	665,816	1,630,316	
157	1650		"		8.8	BH	-8.3	-17.1		1628.8		+1650	+36	666,146	1,630,323	
158	1980		"		6.6	BH	-9.9	-16.5		1629.4		+1980	+43	666,476	1,630,330	
159	2310		"		4.7	BH	-11.6	-16.3		1629.6		+2310	+51	666,805	1,630,338	
TP	2628		357° 3.6'	+10°	14.5	90° 10'	-7.6	-22.1		1623.8		+2628	+49	667,124	1,630,336	667120+1,630,335 4 way Intersect.
TP	2628		"		9.1	BH	-13.1	-22.2		1623.7						4 way
BH	2620		356° 16.2'	+10°	4.7	90° 20'	-19.8	-24.5		1621.4		+2620	+286	667,100	1,630,573	e. 1620. U.S.G.S. 94 WHR 1959
160	2640		357° 15.2'	+10°	14.9	90° 10'	-7.7	-22.6		1623.3	TP	+2639-3	+58	667,132	1,630,345	
160	2640		"		9.2	BH	-13.2	-22.4			TP					
	2970		170° 41' +180°	+10°	+11.3	—	—	+11.3	1634.6		BS	+2970-3	+35			
	2970		"		+14.9	89° 56'	-3.4	+11.5			BS					
161	2640		170° 41'	+10°	12.1	—	—	-12.1		1622.5		-2640	-31	667,459	1,630,347	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 9/23/80	INSTRUMENT MAN G. Cotcamp		ROD MAN G. Litzinger		PARTY NUMBER 6834		NOTES CHECKED BY Gwc. <i>new</i>		LINE NO. 2-A	PAGE 12
AREA Oklahoma	TOPO MAP Hobart 15'	STATE Oklahoma	COUNTY Washita	TWP 8N	RANGE 19W	PPM	PARTY MANAGER L. Davis			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1634.6					
162	2310		170°41'	+10°	4.5	BH	-11.6	-16.1		1618.5		-2310	-28	667,789 / 630,352
163	1980		" "	"	5.1	BH	-9.9	-15.0		1619.6		-1980	-24	668,119 / 630,356
164	1650		" "	"	8.1	BH	-8.3	-16.4		1618.2		-1650	-20	668,449 / 630,360
165	1320		" "	"	11.7	BH	-6.6	-18.3		1616.3		-1320	-16	668,779 / 630,364
166	990		" "	"	12.0	BH	-5.0	-17.0		1617.6		-990	-12	669,109 / 630,368
167	660		" "	"	11.0	BH	-3.3	-14.3		1620.3		-660	-8	669,439 / 630,372
168	330		" "	"	6.3	-	-	-6.3		1628.3		-330	-4	669,769 / 630,376
169	0		" "	"	5.4	-	-	-5.4		1629.2	X	0	0	670,099 / 630,380
170	330		351°4'	+10°	7.2	-	-	-7.2		1627.4		+330	+6	670,429 / 630,386
171	660		" "	"	8.8	-	-	-8.8		1625.8		+660	+12	670,759 / 630,392
172	990		" "	"	11.2	-	-	-11.2		1623.4		+990	+18	671,089 / 630,398
173	1320		" "	"	7.2	BH	-6.6	-13.8		1620.8		+1320	+25	671,419 / 630,405
174	1650		" "	"	8.7	BH	-8.3	-17.0		1617.6		+1650	+31	671,749 / 630,411
175	1980		" "	"	12.4	BH	-9.9	-22.3		1612.3		+1980	+37	672,079 / 630,417
IF	2295		350°58.9'	+10°	11.7	BH	-11.5	-23.2		1611.4		+2295	+39	672,394 / 630,419
176	2310		351°4'	+10°	11.7	BH	-11.6	-23.3		1611.3		+2310	+43	672,409 / 630,423
177	2640		351°4'	+10°	10.6	BH	-13.2	-23.8		1610.8	f	+2640-3	+49	672,736 / 630,429
177	2640				14.6	90°12'	-9.2	-23.8			f			
	2640		170°54.2' +180°	+10°	+12.3	BH	+13.2	+25.5			BS	+2640-3	+42	
	2640				+13.1	90°16'	+12.3	+25.4		1636.2	BS			

672,380 + 1,630,410
4-way Intersect. Sl. 1611

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	9/23/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6834	NOTES CHECKED BY	G.W.C. J.W.S.	LINE NO.	2-A	PAGE	13	
AREA	Oklahoma	TOPO MAP	Hobart 15'	STATE	Oklahoma	COUNTY	Washita	TWP	8N	RANGE	19W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1636.2					
178	2310		170°54.2'	+10°	10.8	BH	-11.6	-22.4		1613.8		-2310	-34	673,063 1,630,435
179	1980		" "	"	7.8	90°30'	-17.3	-25.1		1611.1		-1980	-31	673,393 1,630,440
180	1650		" "	"	11.2	90°30'	-14.4	-25.6		1610.6		-1650	-26	673,723 1,630,445
181	1320		" "	"	10.0	90°40'	-15.4	-25.4		1610.8		-1320	-21	674,053 1,630,450
182	990		" "	"	10.8	90°50'	-14.4	-25.2		1611.0		-990	-16	674,383 1,630,455
183	660		" "	"	10.2	90°50'	-9.6	-19.8		1616.4		-660	-10	674,713 1,630,461
184	330		" "	"	9.4	-	-	-9.4		1626.8		-330	-5	675,043 1,630,466
185	0		" "	"	5.4	-	-	-5.4		1630.8	X	0	0	675,373 1,630,471
186	330		350°54'	+10°	3.5	-	-	-3.5		1632.7		+330	+5	675,703 1,630,476
187	660		" "	"	1.9	-	-	-1.9		1634.3		+660	+10	676,033 1,630,481
188	990		" "	"	0.4	-	-	-0.4		1635.8		+990	+16	676,363 1,630,487
189	1320		" "	"	4.2	TH	+6.6	+2.4		1638.6		+1320	+21	676,693 1,630,492
190	1650		" "	"	1.7	TH	+8.3	+6.6		1642.8		+1650	+24	677,023 1,630,497
191	1980		" "	"	2.0	TH	+9.9	+7.9		1644.1		+1980	+31	677,353 1,630,502
192	2310		350°54'	+10°	10.2	TH	+11.6	+1.4				+2310-3	+34	677,680 1,630,507
192	2310		" "	"	12.1	89°40'	+13.4	+1.3		1637.5	T			
	1980		170°59' +180°	+10°	+6.4	90°10'	+5.8	+12.2		1649.7	BS	+1980-3	+34	
	1980		" "	"	+7.6	90°8'	+4.6	+12.2			BS			
IF	1955		171°8.7'	+10°	3.3	BH	-9.8	-13.1		1636.6		-1955	-39	677,702 1,630,502
193	1650		170°59'	+10°	10.3	BH	-8.3	-18.6		1631.1		-1650	-28	678,007 1,630,513

677,690 +1,630,495
4-Way Intersect. el. 1636.

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	9/20/20	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6834	NOTES CHECKED BY	GWC	LINE NO.	2-A	PAGE	14	
AREA	Oklahoma	TOPO MAP	Robert 15	STATE	Oklahoma	COUNTY	Washita	TWP	8N	RANGE	19W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -		EAST + WEST -		COORDINATES		REMARKS	
												LAT.	DEP.	Y	X				
									1649.7										
194	1320		170°59'	+10°	11.0	90°30'	-11.5	-22.5		1627.2		-1320	-23	678,337	1,630,518				
195	990		" "	"	9.0	90°30'	-8.6	-17.6		1632.1		-990	-17	678,667	1,630,524				
196	660		" "	"	12.1	-	-	-12.1		1637.6		-660	-11	678,997	1,630,530				
197	330		" "	"	6.7	-	-	-6.7		1643.0		-330	-6	679,327	1,630,535				
198	0				5.4	-	-	-5.4		1644.3	X	0	0	679,657	1,630,541			π-opposite station	
199	330		352°4.8'	+10°	7.0	-	-	-7.0		1642.7		+330	+12	679,987	1,630,553				
200	660		" "	"	13.6	-	-	-13.6		1636.1		+660	+24	680,317	1,630,565				
201	990		" "	"	9.8	BH	-5.0	-14.8		1634.9		+989	+36	680,646	1,630,577				
202	1320		" "	"	8.7	BH	-6.6	-15.3		1634.4		+1319	+48	680,976	1,630,589				
203	1650		" "	"	9.8	BH	-8.3	-18.1		1631.6		+1649	+60	681,306	1,630,601				
204	1980		352°4.8'	+10°	7.7	BH	-9.9	-17.6		1632.1	TP	+1979-3	+72-3	681,633	1,630,610				
204	1980		" "	"	14.1	90°6'	-3.5	-17.6			TP								
	1535		171°41.5' + 120°	+10°	+8.1	-	-	+8.1	1640.2		BS	+1534-3	+45-4						
	1535		" "	"	+0.4	BH	+7.7	+8.1			BS								
205	1205		171°41.5'	+10°	6.3	-	-	-6.3		1633.9		-1204	-36	681,960	1,630,615				
206	875		" "	"	6.9	-	-	-6.9		1633.3		-875	-26	682,289	1,630,625				
207	545		" "	"	7.5	-	-	-7.5		1632.7		-545	-16	682,619	1,630,635				
208	215		" "	"	6.1	-	-	-6.1		1634.1		-215	-6	682,949	1,630,645				
TP	0				5.4	-	-	-5.4		1634.8	X	0	0	683,164	1,630,651			683,145 + 1,630,630 interest.	
BM	1300		262°37.7'	+10°	9.2	89°-	+22.7	+13.5		1653.7		+60	-1297	683,224	1,629,352			el. 1653. S.S.G.S. 97 WHV 1959	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
9/23/80		G. Cotcamp		G. Litzinger		2834		Gwc. <i>slw</i>		2-A	15					
AREA		TOPO MAP		STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Hobart 15		Oklahoma	Washita	9N	19W		Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH +	EAST +	COORDINATES		REMARKS
												SOUTH -	WEST -	Y	X	
									1640.2							
<u>HL</u>	1260		261° 1.3'	+10°	9.9	89° -	+22.0	+12.1		1652.3	TP	-22	-1260	683,186	1,629,391	683,170 + 1,629,380 T-intersect.
<u>HL</u>	1260				6.2	89° 10'	+18.3	+12.1			TP					
	2095		171° 6.5' +180°	+10°	+8.0	-		+8.0	1660.3		BS	+2095.3	+41			1260' offset west between
	2095				+5.6	90° 4'	+2.4	+8.0			BS					208 + 209.
209	1985		171° 2'	+10°	8.5	-		-8.5		1651.8		-1980	-36	683,298	1,629,396	
210	1650		"	"	7.2	-		-7.2		1653.1		-1650	-30	683,628	1,629,402	
211	1320		"	"	6.2	-		-6.2		1654.1		-1320	-24	683,958	1,629,408	
212	990		"	"	5.2	-		-5.2		1655.1		-990	-18	684,288	1,629,414	
213	660		"	"	5.4	-		-5.4		1654.9		-660	-12	684,618	1,629,420	
214	330		"	"	3.5	-		-3.5		1656.8		-330	-6	684,948	1,629,426	
215	0				5.4	-		-5.4		1654.9	TP	0	0	685,278	1,629,432	
216	330		351° 6.7'	+10°	10.0	91° -	-5.8	-15.8		1644.5		+330	+6	685,608	1,629,438	
217	660		"	"	4.4	91° -	-11.5	-15.9		1644.4		+660	+13	685,938	1,629,445	
218	990		"	"	12.6	90° 10'	-2.9	-15.5		1644.8		+990	+19	686,268	1,629,451	
219	1320		"	"	11.9	-		-11.9		1648.4		+1320	+26	686,598	1,629,458	
220	1650		"	"	11.5	90° 6'	-2.9	-14.4		1645.9		+1650	+32	686,928	1,629,464	
221	1980		"	"	10.3	90° 6'	-3.5	-13.8		1646.5		+1980	+38	687,258	1,629,470	
222	2310		351° 6.7'	+10°	6.7	-		-6.7			TP	+2310.3	+45	687,585	1,629,477	
222	2310				13.5	89° 50'	+6.7	-6.8		1653.5	TP					

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	9/23/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6834	NOTES CHECKED BY	Guc. rlu	LINE NO.	2-A	PAGE	16	
AREA	Oklahoma	TOPO MAP	Hoibert 15	STATE	Oklahoma	COUNTY	Washita	TWP	9N	RANGE	19W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
222										1653.5				
	1650		171° 0' +120'	+10°	+6.9	BH	+8.3	+15.2	1668.7		BS	+1650-3	+29	
	1650				+5.6	90° 20'	+9.6	+15.2		BS				
223	1320		171° 0'	+10°	9.2	BH	-6.6	-15.8		1652.9		-1320	-23	687,912 / 1,629,488
224	990		" "	"	10.0	-		-10.0		1658.7		-990	-17	688,242 / 1,629,489
225	770		171° 21.5'	+10°	10.8	-		-10.8		1657.9		-770	-18	688,462 / 1,629,488 688,440 + 1,629,490 + Way Intersect @ 1657.
225	660		171° 0'	+10°	10.9	-		-10.9		1657.8		-660	-12	688,572 / 1,629,494
226	330		" "	"	7.7	-		-7.7		1661.0		-330	-6	688,902 / 1,629,500
227	0		" "	"	5.4	-		-5.4		1663.3	TP	0	0	689,232 / 1,629,506
228	330		351° 6.5'	+10.2°	7.0	-		-7.0		1661.7		+330	+8	689,562 / 1,629,514
229	660		" "	"	3.8	-		-3.8		1664.9		+660	+15	689,892 / 1,629,521
230	990		" "	"	0.9	-		-0.9		1667.8		+990	+23	690,222 / 1,629,529
231	1320		" "	"	4.0	TH	+6.6	+2.6		1671.3		+1320	+30	692,552 / 1,629,536
232	1650		" "	"	5.3	89° 30'	+14.4	+9.1		1677.8		+1650	+38	690,882 / 1,629,544
233	1980		351° 6.5'	+10.2°	4.2	89° 30'	+17.3	+13.1		1681.8	TP	+1979-2	+45	691,209 / 1,629,551
233	1980		" "	"	9.8	89° 20'	+23.0	+13.2			TP			
	1980		169° 31.3' +180°	+10.2°	+8.0	-		+8.0			BS	+1980-3	-10	
	1980		" "	"	+4.4	90° 6'	+3.5	+7.9	1689.7		BS			
234	1650		169° 31.3'	+10.2°	5.4	-		-5.4		1684.3		-1650	+8	691,536 / 1,629,549
235	1320		" "	"	6.2	-		-6.2		1683.5		-1320	+6	691,866 / 1,629,547
236	990		" "	"	6.2	-		-6.2		1683.5		-990	+5	692,196 / 1,629,546

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE	9/23/80	INSTRUMENT MAN	G. Cotcamp	ROD MAN	G. Litzinger	PARTY NUMBER	6834	NOTES CHECKED BY	G.W.C.	LINE NO.	2-A	PAGE	17	
AREA	Oklahoma	TOPO MAP	Hobart 15	STATE	Oklahoma	COUNTY	Washita	TWP	9N	RANGE	19W	PPM	PARTY MANAGER	L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1689.7					
237	660		169° 31.3'	+10.2°	5.8	-		-5.8		1683.9		-660	+3	692,526 1,629,544
238	330		" "		5.4	-		-5.4		1684.3		-330	+2	692,856 1,629,543
239	0				5.4	-		-5.4		1684.3	π	0	0	693,186 1,629,541
240	330		349° 38.8'	+10.2°	2.8	-		-2.8		1686.9		+330	-1	693,516 1,629,540
X	530		346° 18'	+10.2°	0.0	-		-0.0		1689.7		+329	-32	693,715 1,629,509 chiseled square el. 1689
π	550		349° 2'	+10.2°	1.4	-		-1.4		1688.3		+550	-7	693,736 1,629,534 4-way Intersect.
241	660		349° 38.8'	+10.2°	3.0	TH	+3.3	+0.3		1690.0		+660	-2	693,896 1,629,539
242	227				10.4	89° -	+17.3	+6.9		1696.6		+990	-3	694,176 1,629,538
243	1320				10.8	89° -	+23.0	+12.2		1701.9		+1320	-4	694,506 1,629,537
244	1650		349° 38.8'	+10.2°	4.5	89° 20'	+19.2	+14.7		1704.4	TF	+1650 -3	-4	694,833 1,629,537
244	1650				9.3	89° 10'	+24.0	+14.7			TF			
	1980		170° 55.2' +180°	+10.2°	+14.3	90° 20'	+11.5	+25.8	1730.2		BS	+1980 -3	+39	
	1980				+8.6	90° 30'	+17.3	+25.9			BS			
245	1650		170° 55.2'	+10.2°	11.0	90° 30'	-14.4	-25.4		1704.8		-1650	-32	695,160 1,629,544
246	1320				10.1	90° 50'	-19.2	-29.3		1700.9		-1320	-24	695,490 1,629,550
247	990				7.8	91° -	-17.3	-25.1		1705.1		-990	-19	695,820 1,629,557
248	660				7.5	91° -	-11.5	-19.0		1711.2		-660	-13	696,150 1,629,563
249	330				10.9	-		-10.9		1719.3		-330	-6	696,480 1,629,570
250	0				5.4	-		-5.4		1724.8	π	0	0	696,810 1,629,576
251	330		351° 3.2'	+10.2°	1.2	-		-1.2		1729.0		+330	+7	697,140 1,629,583

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE			
9/23/80		G. Cotcamp		G. Litzinger		6834		Swc. J.W.		2-A	18			
AREA		TOPO MAP	STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER						
Oklahoma		Hobart 15/D11	Oklahoma	Washita	9N	19.W		L. Davis						
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	CITY DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1730.2					
252	660		351° 3.2'	+10.2	1.0	TH	+3.3	+2.3		1732.5		+660	+14	697,470 / 1,629,590
253	990		"	"	7.3	TH	+5.0	-2.3		1727.9		+990	+22	697,800 / 1,629,598
254	1320		"	"	200	TH	+6.6	-13.4		1716.8		+1320	+29	698,130 / 1,629,605
255	1650		"	"	17.5	TH	+8.3	-9.2		1721.0		+1650	+36	698,460 / 1,629,612
256	1980		"	"	0.9	TH	+9.9	+9.0		1739.2		+1980	+43	698,790 / 1,629,619
257	2310		"	"										horiz. correct. y = 498 x = -7
257	2205		350° 57.3'	+10.2	11.0	89° 20'	+19.2	+8.2		1738.4		+2205	+44	699,015 / 1,629,620
257	2310		351° 3.2'		10.7	89° 30'	+20.2	+9.5		1739.7	TP	+2310-3	+38 -4	699,015 + 1,629,620 + Way Intersection at 1738.
257	2310				14.6	89° 24'	+24.2	+9.6			TP			
	2640		170° 30.4' +120	+9.9	+14.1	-		+14.1	1754.0		BS	+2640-3	+19 -4	
	2640				+6.8	90° 10'	+7.7	+14.5			BS			
258	2310		170° 30.4'	+9.9	10.0	-		-10.0	1744.0			-2310	-16	699,444 / 1,629,609
259	1980		"		7.6	-		-7.6	1746.4			-1980	-14	699,774 / 1,629,611
260	1650		"		10.9	-		-10.9	1743.1			-1650	-12	700,104 / 1,629,613
261	1320		"		8.2	-		-8.2	1745.8			-1320	-9	700,434 / 1,629,616
262	990		"		8.5	8H	-5.0	-13.5	1740.5			-990	-7	700,764 / 1,629,618
263	660		"		12.2	8H	-3.3	-15.5	1738.5			-660	-5	701,094 / 1,629,620
264	330		"		6.4	-		-6.8	1747.2			-330	-2	701,424 / 1,629,623
265	0		"		5.4	-		-5.4	1748.6			0	0	701,754 / 1,629,625
266	330		351° 39.6	+9.7	5.5	-		-5.3	1748.7			+330	+8	702,084 / 1,629,633

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
9/30/80		G LITZINGER		G COTCAMP		6834		GWC. <i>rdw</i>		2-A	19						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Dill City 15'		Oklahoma	Washita		9 N	19 W		DAVIS							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1754.0								
267	460		351° 37.6'	+9.7	9.8	-		-9.8		1744.2		+460	+16	702,417	1,629,671		
268	990				6.4	-		-6.4		1747.6		+990	+23	702,747	1,629,698		
269	1320				9.9	-		-9.9		1744.1		+1320	+31	703,077	1,629,656		
270	1450				7.8	-		-7.8		1746.2		+1650	+39	703,907	1,629,664		
271	1980		351° 39.4	+9.7°	0.7	90° 10'	-5.8	-6.5		1747.5	TP	+1977-3	+47-4	703,730	1,629,668		
271	1980				4.3	90° 04'	-2.3	-6.6			TP						
	2640		170° 33.1 + 180°	+9.7°	+5.8	8 H	+13.2	+19.0	1766.2		BS	+2640-3	+12-4				
	2690				+10.7	90° 10'	+7.7	+18.4	1767		BS						
272	2310				4.9	8 H	-11.6	-16.5		1749.7		-2310	-10	704,057	1,629,666		
$\frac{1}{2}$	2130		170° 40.1	+9.7°	12.5	-		-12.5		1753.7		-2130	-14	704,237	1,629,662	704,230 + 1,629,675 4-way Intersect. el. 1759	
273	1980		170° 33.1	+9.7°	12.1	-		-12.1		1754.1		-1980	-9	704,387	1,629,667		
274	1450		"		9.8	-		-9.8		1756.4		-1650	-7	704,717	1,629,669		
275	1320		"		8.6	-		-8.6		1757.6		-1320	-6	705,047	1,629,670		
276	990		"		8.7	-		-8.7		1757.5		-990	-4	705,377	1,629,672		
277	660		"		7.8	-		-7.8		1758.7		-660	-3	705,707	1,629,673		
278	330		"		6.6	-		-6.6		1759.6		-330	-1	706,037	1,629,675		
279	0		"		5.4	-		-5.4		1760.8	TP	0	0	706,367	1,629,676		
280	330		350° 59.2'	+9.7°	4.1	-		-4.1		1762.1		+330	+4	706,697	1,629,680		
281	660		"		2.5	-		-2.5		1763.7		+660	+8	707,027	1,629,684		
282	990		"		4.4	TH	+5.0	+0.6		1766.8		+990	+12	707,357	1,629,688		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 9/30/80	INSTRUMENT MAN GLITZINGER	ROD MAN G. COLEMAN P	PARTY NUMBER 6834	NOTES CHECKED BY G.W.C.	LINE NO. 2-A	PAGE 20
AREA Oklahoma	TOPO MAP Dill City	STATE Oklahoma	COUNTY Washita	TWP 9. N.	RANGE 19W	PPM
			PARTY MANAGER DAVIS			

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
									1766.2					
283	1320		350°59.2'	+9.7	1.9	TH	+6.6	+4.7		1770.9		+1320	+16	707,687 1,629,692
284	1650				1.7	TH	+8.3	+6.6		1772.8		+1650	+20	708,017 1,629,696
285	1980				1.2	TH	+9.9	+8.7		1774.9		+1980	+24	708,347 1,629,700
286	2310				0.7	TH	+11.5	+10.8		1777.0		+2310	+28	708,677 1,629,704
287	2640		350°59.2'	+9.7	0.2	TH	+13.2	+13.0		1779.2	TP	+2640-4	+32-4	709,003 1,629,704
287	2640				10.3	89°30'	+23.0	+12.7			TP			
	1650		171°6' +180	+9.7	+3.1	90°30'	+16.3	+19.4	1798.6		BS	+1650-4	+23-4	
	1650				+1.3	90°35'	+18.2	+19.5			BS			
289	1320		171°6'	+9.7	0.7	90°40'	-15.4	-16.1		1782.5		-1320	-19.1	709,329 1,629,705
289	1090		171°20'	+9.7	0.9	90°40'	-12.7	-13.6		1785.0		-1090	-20	709,559 1,629,703
289	990		171°6'	+9.7	6.4	90°20'	-5.8	-12.2		1786.4		-990	-14	709,659 1,629,709
290	660		"		6.0	8H	-3.3	-9.3		1789.3		-660	-9	709,989 1,629,714
291	330		"		6.2	8H	-1.7	-7.9		1790.7		-330	-5	710,319 1,629,718
292	0				5.4	-	-	-5.4		1793.2	TP	0	0	710,649 1,629,723 OPP STATION
293	330		351°12.3'	+9.7	1.4	-	-	-1.4		1797.2		+330	+5	710,979 1,629,728
294	660				1.2	89°30'	+5.8	+4.6		1803.2		+660	+10	711,309 1,629,733
295	990		351°12.3'	+9.7	2.6	89°20'	+11.5	+8.9		1807.5	TP	+990-3	+16-3	711,636 1,629,736
295	990				1.4	89°24'	+10.4	+9.0			TP			
	990		149°37.9 +180	+9.7	711.2	-	-	+11.2	1818.7		BS	+990-3	-12-2	
	990				+6.2	8H	+5.0	+11.2			BS			

709,540+1,629,690
4 way Intersect. cl. 1788

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE 10/1/80	INSTRUMENT MAN G. Cotkamp		ROD MAN G. Litzinger	PARTY NUMBER 6834	NOTES CHECKED BY G.W.C. J. ...	LINE NO. 2-A	PAGE 22
AREA Oklahoma	TOPO MAP Dill City 15'	STATE Oklahoma	COUNTY Washita	TWP	RANGE	PPM	PARTY MANAGER L. Davis

STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.	
308										1836.3				
	1650		171° 11.8' +180°	+9.7°	+3.7	91° -	+28.8	+32.5	1868.8		BS	+1650-4	+26	
	1650				+17.4	10'38"	+18.2	+32.6			BS			
309	1320		171° 11.8'	+9.7°	3.5	91° -	-23.0	-26.5		1842.3		-1320	-21	716,237 1,629,780
310	990		"	"	5.9	91° -	-17.3	-23.2		1845.6		-990	-15	716,567 1,629,786
311	660		"	"	8.4	91° -	-11.5	-19.9		1848.9		-660	-10	716,897 1,629,791
312	330		"	"	12.8	BH	-1.7	-14.5		1854.3		-330	-5	717,227 1,629,796
313	0		"	"	5.4	-		-5.4		1863.4	X	0	0	717,557 1,629,801
314	330		350° 55.2'	+9.7°	0.3	-		-0.3		1868.5		+330	+4	717,887 1,629,805
315	660		"	"	0.1	TH	+3.3	+3.2		1872.0		+660	+7	718,217 1,629,808
316	990		"	"	3.5	89°30'	+8.6	+5.1		1873.9		+990	+11	718,547 1,629,812
317	1320		"	"	2.9	89°20'	+15.4	+12.5		1881.3		+1320	+14	718,877 1,629,815
318	1650		350° 55.2'	+9.7°	5.2	89° -	+28.8	+25.6		1894.4	TP	+1650-4	+18	719,203 1,629,819
318	1650				5.2	89°56'	+30.7	+25.5			TP			
	990		170° 27.4' +180°	+9.7°	+3.7	90°20'	+7.5	+11.2	1905.6		BS	+990-4	+3	
	990				+2.5	90°35'	+8.6	+11.1			BS			
319	660		170° 27.4'	+9.7°	11.7	BH	-3.3	-15.0		1890.6		-660	-2	719,529 1,629,820
320	330		"	"	8.7	-		-8.7		1896.9		-330	-1	719,859 1,629,821
321	165		169° 27'	+9.7°	4.6	-		-4.6		1901.0		-115	+2	720,074 1,629,824
321	0				5.4	-		-5.4		1900.2	X	0	0	720,189 1,629,822
322	330		352° 0'	+9.7°	1.3	-		-1.3		1904.3		+330	+10	720,519 1,629,832

720,074 1,629,815
4 Way Intersection e1, 1901,

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
9/30/80		GLITZINGER		GLOTCAMP		6874		GWC.		2-A	21						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
OKlahoma		Dill City		OKlahoma	Washita		9N	19W		DALLS							
STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1818.7								
296	660		169° 32.9'	+7.7°	4.2	BH	-3.3	-7.5		1811.2		-660	+8	711,963	1,629,730		
297	330		" "	"	6.1	-		-6.1		1812.6		-330	+4	712,293	1,629,726		
298	0				5.4	-		-5.4		1813.3	TP	0	0	712,623	1,629,722	opp sta	
299	330		351° 41.2'	+9.7°	3.6	-		-3.6		1815.1		+330	+8	712,953	1,629,730		
300	660		" "	"	1.8	-		-1.8		1816.9		+660	+16	712,283	1,629,738		
301	990		" "	"	4.5	TH	+5.0	+0.5		1819.2		+990	+24	713,613	1,629,746		
302	1320		351° 41.2'	+9.7°	4.2	TH	+6.6	+2.4		1821.1	TP	+1320 -4	+32 -	713,939	1,629,754		
302	1320				5.9	89° 40'	+7.7	+2.4			TP						
	990		170° 17' +180	+7.7°	79.0	BH	+5.0	+14.0	1835.1		BS	+990 -4	-0				
	990				+11.1	90° 10'	+2.9	+14.0			BS						
303	660		170° 17'	+9.7°	5.8	90° 30'	-5.8	-11.6		1823.5		-660	-0	719,265	1,629,754	horiz. corred. y=-32'	
304	330		" "	"	6.7	70° 30'	-2.9	-9.6		1825.5		-330	-0	719,595	1,629,754	x=-29'	
7r	90		172° 46.4'	+9.7°	4.2	-		-4.2		1830.9		-90	-4	719,835	1,629,750	719,835 + 1,629,750 4 way = 1,830.	
305	0				5.4	-		-5.4		1829.7	TP	0	0	719,925	1,629,754		
306	330		351° 31.2'	+9.7°	3.9	-		-3.9		1831.2		+330	+7	715,255	1,629,761		
307	660		" "	"	2.0	-		-2.0		1833.1		+660	+14	715,585	1,629,768		
308	990		351° 31.2'	+9.7°	3.7	TH	+5.0	+1.3			TP	+990 -4	+21	715,911	1,629,775		
308	990				1.7	89° 50'	+2.9	+1.2		1836.3	TP						

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
10/1/80		G. Cotcamp		G. Litzinger		6837		G.W.C. J.W.		2-A	23					
AREA		TOPO MAP	STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER								
Oklahoma		Mill City 15'	Oklahoma	Washita				L. Davis								
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH +	EAST +	COORDINATES		REMARKS
												SOUTH -	WEST -	Y	X	
												LAT.	DEP.			
									1905.6							
323	660		351°10.6'	+9.7°	3.8	TH	+3.3	-0.5		1905.1	IF	+460-4	+10+1	720845	1629833	IF opposite station
323	660				4.4	87°4'	+3.8	-0.6			IF					
	990		172°26.4'+180°	-7.7°	4.2	"		+8.2	1913.3		BS	+989-4	+37+1			
	990				4.2	TH	-5.0	+8.2			BS					
324	660		71°47'	+7.7°	6.3	"		-6.3		1907.0		-660	-17	721170	1629854	
325	330		"	"	6.7	"		-6.7		1906.6		-330	-9	721500	1629852	
326	0		"	"	5.4	"		-5.4		1907.9	X	0	0	721830	1629871	
327	332		342°32.6'	+7.7°	2.9	"		-2.9		1910.4	TP	+329-4	-45+1	722155	1629827	TP opposite sta.
327	332				4.5	TH	+1.7	-2.8			TP					
	2312		171°55'+180°	+9.7°	+12.4	90°20'	+20.2	+32.6	1943.0		BS	+2309-4	+66+1			
	2312				+15.0	90°26'	+17.5	+32.5			BS					
328	1100		171°5'	+9.7°	7.8	90°40'	-23.0	-30.8		1912.2		-1980	-27	722480	1629867	
329	1100		"	"	6.6	90°40'	-19.2	-25.8		1917.2		-1650	-23	722810	1629871	
330	1320		"	"	10.5	90°40'	-15.4	-26.2		1916.8		-1320	-18	723190	1629876	
331	1320		"	"	12.0	90°40'	-11.5	-23.5		1919.5		-990	-14	723470	1629880	
332	1320		"	"	11.1	90°40'	-7.7	-18.8		1924.2		-660	-9	723800	1629885	
333	330		"	"	12.4	"		-12.4		1930.6		-330	-5	724130	1629889	
334	0		"	"	5.4	"		-5.4		1937.6	X	0	0	724460	1629894	
335	330		351°14'	+7.7°	4.2	"		-4.2		1938.8		+330	+5	724790	1629899	
336	660		"	"	7.0	"		-7.0		1936.0		+660	+11	725120	1629905	

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN			ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
10/1/80		G. Cotcamp			G. Williams		5824		GWC		2-A	29					
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		Oill city 15'		Oklahoma	Wade					L. Davis							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1943.0								
336	930		350°50.7'	+9.7°	9.3	-		-9.3		1933.7		+930	+9	725,390	1,629,903	725,390 + 1,629,910	
337	990		351°14'	+9.7°	9.0	-		-9.0		1934.0		+990	+16	725,450	1,629,910	el. 1901.	
338	1020		"	"	8.8	-		-8.8		1934.2		+1320	+22	725,780	1,629,916		
339	1650		"	"	5.8	-		-5.8		1937.2		+1650	+27	726,110	1,629,921		
340	1980		"	"	1.8	-		-2.8		1940.2		+1980	+32	726,440	1,629,926		
341	2310		351°14'	+9.7°	3.2	-		-3.2		1939.8		+2310-5	+38+1	726,765	1,629,933	basic to be + 10	
341	2310		"	"	14.8	TH	+11.6	-3.2									
	1450		351°11'+10"	+9.7°	-5.0	-		+5.0	1944.8			+1450-5	+25+1				
	1650		"	"	+13.3	-		+5.0									
342	1220		351°11'	+9.7°	4.7	-		-4.7		1940.1		-1320	-20	727,090	1,629,939		
343	990		"	"	2.2	-		-2.2		1942.6		-990	-15	727,420	1,629,944		
344	660		"	"	2.1	-		-2.1		1942.7		-660	-10	727,750	1,629,949		
345	430		"	"	4.1	-		-4.1		1940.7		-330	-5	728,080	1,629,954		
346	0		"	"	5.4	-		-5.4		1939.4	X	0	0	728,410	1,629,959		
347	230		351°14'	+9.7°	3.1	-		-3.1		1941.7		+330	+5	728,740	1,629,964		
348	660		"	"	3.1	-		-3.1		1941.7		+660	+11	729,070	1,629,970		
349	990		"	"	3.2	-		-3.2		1941.6		+990	+16	729,400	1,629,975		
350	1320		"	"	3.1	-		-3.1		1941.7		+1320	+22	729,730	1,629,981		
351	1040		351°14'	+9.7°	4.2	-	+8.3	+4.1		1948.9	TF	+1040-4	+27+1	730,056	1,629,987		
352	1650		"	"	5.5	89°40'	+9.6	+4.1			TF						

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE					
10/1/80		G. Cotcamp		G. Litzinger		6834		Shl New		2-A	25					
AREA		TOPO MAP	STATE	COUNTY	TWP	RANGE	PPM	PARTY MANAGER								
Oklahoma		Lill City 15'	Oklahoma	Washita				L. Davis								
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH +	EAST +	COORDINATES		REMARKS
												SOUTH -	WEST -	Y	X	
												LAT.	DEP.			
351										1948.9						
	550		170° 46.0' +180°	+9.7°	+2.2	74	-3.3	-1.1	1947.8		BS	+460 -4	+5 +1			
	650				+2.8	92° 40'	-3.8	-1.0			BS					horiz. correct. Y = -50' X = +8'
352	740		170° 46.0'	+9.7°	1.7	-	-	-1.9		1945.9		-330	-3	730,382	1,629,990	730,640 + 1,629,985
	75		170° 5'	+9.7°	4.5	-	-	-4.6		1943.2		-72	-8'	730,640	1,629,985	4-Way Intersect.
	22		231° 20'	+9.7°	6.5	-	-	-6.5		1941.3		-11	-19	730,701	1,629,974	steel culvert e.l. 1941
353	0				5.4	-	-	-5.4		1942.4	X	0	0	730,712	1,629,993	first sta. on pavement
354	320		351° 1.8'	+9.7°	4.7	-	-	-4.7		1943.1		+330	+4	731,042	1,629,997	
355	660		" "		1.2	-	-	-4.2		1943.6		+660	+8	731,372	1,630,001	
356	990		351° 1.8'	+9.7°	4.8	-	-	-4.8		1943.0	TP	+990	+13	731,702	1,630,006	
356	900				9.8	74	-5.0	-4.8			TP					
	2970		170° 46.3' +190	+9.7°	8.7	-	-	+8.7	1951.7		BS	+2970	+24			
	2970				10.2	90° 10'	+8.6	+8.8			BS					
357	2440		170° 46.3'	+9.7°	8.8	-	-	-8.8		1942.9		-2646	-22	732,032	1,630,008	
358	2810				8.2	-	-	-8.2		1943.5		-2310	-19	732,362	1,630,011	
359	1980				8.3	-	-	-8.3		1943.4		-1986	-16	732,692	1,630,014	
360	1650				6.8	-	-	-6.8		1944.9		-1650	-14	733,022	1,630,016	
361	1320				6.7	-	-	-6.7		1945.0		-1320	-11	733,352	1,630,019	
362	790				6.0	-	-	-6.0		1945.7		-990	-8	733,682	1,630,022	
363	660				4.9	-	-	-4.9		1946.8		-660	-5	734,012	1,630,025	
364	830				4.9	-	-	-4.9		1946.8		-330	-3	734,342	1,630,027	

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
10/2/80		G. LITZINGER		G. COTNER		6834		BHL		2-19		26			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
OKLAHOMA		DILL CITY		OKLAHOMA		WASHINGTON								DAVIS	
STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1951.7						
365	0				5.4	-		-5.4		1946.3	JT	0	0	734,672	1,630,030
366	330		350° 57.3'	+9.7°	3.0	-		-3.0		1948.7		+330	+4	735,002	1,630,034
367	660		" "	"	2.4	-		-2.4		1949.3		+660	+8	735,332	1,630,038
368	990		" "	"	2.6	-		-2.6		1949.1		+990	+11	735,662	1,630,041
368	1260		350° 34.7'	+9.7°	2.0	-		-2.0		1949.7		+1260	+6	735,932	1,630,036
369	1320		350° 57.3'	+9.7°	2.4	-		-2.4		1949.3		+1320	+15	735,992	1,630,045
370	1650		" "	"	2.6	-		-2.6		1949.1		+1650	+19	736,322	1,630,049
371	1980		" "	"	0.8	-		-0.8		1950.9		+1980	+23	736,652	1,630,053
370	2310		" "	"	1.4	-		-1.4		1950.3		+2310	+26	736,982	1,630,056
B19	2360		351° 30.8'	+9.7°	11.9	TH	+11.8	-0.1		1951.6		+2359	+50	737,031	1,630,080
373	2640		350° 57.3'	+9.7°	1.0	-		-1.0		1950.7		+2640	+30	737,312	1,630,060
377	2970		350° 57.3'	+9.7°	0.5	-		-0.5		1951.2	TP	+2970	+34	737,642	1,630,069
374	2970				9.0	89° 30'	+8.6	-0.4			TP				
	3310		170° 58' + 180°	+9.7°	+5.0	-		+5.0	1956.2		BS	+2310	+27		
	3310				+12.0	89° 50'	-6.7	+5.3			BS				
375	1980		170° 58'	+9.7°	5.1	-		-5.1		1951.1		-1980	-23	737,972	1,630,068
376	1650		" "	"	5.8	-		-5.8		1950.4		-1650	-19	738,302	1,630,072
377	1320		" "	"	5.7	-		-5.7		1950.5		-1320	-15	738,632	1,630,076
378	990		" "	"	4.6	-		-4.6		1951.6		-990	-12	738,962	1,630,079
379	660		" "	"	5.4	-		-5.4		1950.8		-660	-8	739,292	1,630,083

735890 + 1,630,005
4.000

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SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
11/2/80		G. LITZINGER		G. COTCHAMP		6834		Bul J.W.		2-A	27						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
Oklahoma		111 City 15'		Oklahoma	Washita					DAVIS							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH - LAT.	EAST + WEST - DEP.	COORDINATES		REMARKS	
														Y	X		
									1956.2								
380	330		170° 58'	+9.70	5.8	-		-5.8		1950.4		+330	-4	739,622	1,630,087		
381	0				5.4	-		-5.4		1950.8	T	0	0	739,952	1,630,091		
382	330		350° 52.6'	+9.7°	6.4	-		-6.4		1949.8		+330	+3	740,282	1,630,094		
383	660		" "	"	7.9	-		-7.9		1948.3		+660	+7	740,612	1,630,098		
384	990		" "	"	7.8	-		-7.8		1948.4		+990	+10	740,942	1,630,101		
385	1263		350° 30.1'	+9.7°	6.6	-		-6.6		1949.6		+1263	+4	741,215	1,630,095	741,220 + 1,630,095 4 way el. 1997	
385	1320		350° 52.6'	+9.7°	8.1	-		-8.1		1948.1		+1320	+13	741,272	1,630,104		
386	1650				9.4	-		-9.4		1946.8		+1650	+17	741,602	1,630,108		
387	1980				10.0	-		-10.0		1946.2		+1980	+20	741,932	1,630,111		
388	2310		350° 52.6'	+9.7°	5.0	BH	-11.6	-16.6		1939.8	TP	+2310	+23	742,262	1,630,114		
388	2310				9.4	90° 10'	-6.7	-16.1			TP						
	2970		170° 57.2' + 180	+9.7°	+9.8	TH	-14.9	-5.1	1934.7		BS	+2970	+34				
	2970				+3.7	89° 50'	-8.6	-4.9			BS						
389	2640		170° 57.2'	+9.7°	11.8	TH	+13.2	+1.4		1936.1		-2640	-30	742,592	1,630,118		
390	2310		"	"	11.5	TH	+11.6	+0.1		1934.8		-2310	-24	742,922	1,630,122		
391	1980		"	"	10.5	TH	+9.9	-0.6		1934.1		-1980	-23	743,252	1,630,125		
392	1650		"	"	9.1	TH	+8.3	-0.8		1933.9		-1650	-19	743,582	1,630,129		
393	1320		"	"	4.6	TH	+6.6	+2.0		1936.7		-1320	-15	743,912	1,630,133		
394	990		"	"	4.8	-		-4.8		1929.9		-990	-11	744,242	1,630,137		
395	660		"	"	11.0	-		-11.0		1923.7		-660	-8	744,572	1,630,140		

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
10/2/80		GLITZINGER		G. CATERNA		6834		BHL		2-19	28						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
OKLAHOMA		DILL CITY 15'		OKLAHOMA	WASHITA					DAVIS							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1934.7								
396	330		170° 57.2'	+9.7°	10.5	-		-10.5		1924.2		-330	-4	749,902	1,630,144		
397	0				5.4	-		-5.4		1929.3	T	0	6	745,232	1,630,148		
398	330		351° 17.4'	+10°	8.3	-		-8.3		1926.4		+330	+7	745,562	1,630,155		
399	660		"		10.8	-		-10.8		1923.9		+660	+15	745,892	1,630,163		
400	990		"		13.6	-		-13.6		1921.1		+990	+22	746,222	1,630,170		
401	1262		351° 3.1'	+10°	12.8	BH	-6.3	-18.6		1916.1		+1262	+23	746,494	1,630,171	746,490 + 1,630,180 funny	
401	1320		351° 17.4'	+10°	11.5	BH	-6.6	-18.1		1916.6		+1320	+30	746,552	1,630,178		
402	1450		"		10.0	BH	-8.3	-18.3		1916.4		+1450	+37	746,882	1,630,185		
403	1980		"		11.4	BH	-9.9	-21.3		1913.4		+1979	+45	747,211	1,630,193		
404	2310		351° 17.4'	+10°	6.5	-		-6.5			T	+2309	+52	747,591	1,630,200		
404	2310				13.3	89° 50'	+6.7	-6.6		1928.1	T						
	1450	1648	170° 27.1' + 190°	+10°	+9.5	87°	-86.2	-76.7	1851.4		B5	+1648	+13				
	1650				+14.4	86° 50'	-91.0	-76.6			B5						
405	1320	1319			4.8	87°	+69.0	+69.2		1915.6		-1318	-10	747,871	1,630,203		
406	990	989			1.1	87°	+51.7	+50.6		1902.0		-989	-8	748,200	1,630,205		
407	660	659			1.5	87°	+34.5	+33.0		1884.4		-659	-5	748,530	1,630,208		
408	330				2.3	88°	+11.5	+9.2		1860.6		-330	-3	748,859	1,630,210		
409	0				5.4	-		-5.4		1896.0	T	0	0	749,189	1,630,213		
	85		348° 18.4'	+10°	6.4	-		-6.4		1845.0		+85	-3	749,274	1,630,210	BRIDGE 5-Ten	
410	330		360° 56.4'	+10°	5.4	-		-5.4		1846.0		+330	+5	749,519	1,630,218		

SURVEY NOTES-HIGH RESOLUTION DATA

GEO-445

Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
10/21/80		G LITZINGER		G GORHAM		6834		SLL		2-19	29						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
OKLAHOMA		DILL CITY 15'		Oklahoma	Washita					DANIS							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1851.4								
411	660		350° 56.4'	+10°	0.8	77	+3.3	+2.5		1853.9		+660	+18	749,849	1,630,224		
412	990		"		6.7	89°	+17.3	+10.6		1862.0		+990	+16	750,179	1,630,229		
413	1320		"		9.0	89°	+23.0	+14.0		1865.4		+1320	+22	750,509	1,630,235		
414	1650		"		7.6	89°	+28.8	+21.2		1872.6		+1650	+27	750,839	1,630,240		
415	1980		350° 56.4'	+10°	11.8	89°	+34.6	+22.8		1874.2	TP	+1980	+32	751,169	1,630,245		
415	1980				5.9	89° 10'	+28.8	+22.9			TP						
	2970		171° 0.9' +180	+10°	+11.0	-		+11.0	1885.2		BS	+2970	+53				
	2970				+2.4	90° 10'	+8.6	+11.0			BS						
416	2640		171° 0.9'	+10°	10.5	-		-10.5		1874.7		-2640	-47	751,499	1,630,251		
417	2360		171° 19.6'	+10°	12.0	-		-12.0		1873.2		-2359	-55	751,780	1,630,243	751,800 + 1,630,270 5 way el. 1873	
417	2310		171° 0.9'	+10°	12.6	-		-12.6		1872.6		-2310	-41	751,829	1,630,257		
418	1980		"	"	7.5	-		-7.5		1877.7		-1980	-35	752,159	1,630,263		
419	1650		"	"	7.7	-		-7.7		1877.5		-1650	-29	752,489	1,630,269		
420	1320		"	"	8.2	-		-8.2		1877.0		-1320	-23	752,819	1,630,275		
421	990		"	"	7.9	-		-7.9		1877.3		-990	-18	753,149	1,630,280		
422	660		"	"	7.3	-		-7.3		1877.9		-660	-12	753,479	1,630,286		
423	330		"	"	5.3	-		-5.3		1879.9		-330	-4	753,809	1,630,292		
424	0				5.4	-		-5.4		1879.8	TP	0	0	754,139	1,630,298		
425	330		350° 57.4'	+10°	10.3	-		-10.3		1874.9		+330	+6	754,469	1,630,304		
426	660		"		13.3	84	-3.3	-16.6		1868.6		+660	+11	754,799	1,630,309		

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.		PAGE			
10/2/80		BLITZINGER		G. COY CAMP		6834		BCL JAW		2-A		30			
AREA		TOPO MAP		STATE		COUNTY		TWP		RANGE		PPM		PARTY MANAGER	
OKLAHOMA		DILL CITY 15'		OKLAHOMA		WASHITA								DAVIS	
STATION NO.	SLOPE DISTANCE	PLOT DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS TP	COORDINATES		REMARKS	
												NORTH + SOUTH - LAT.	EAST + WEST - DEP.		Y
									1885.2						
427	990		350° 57.4'	+10°	6.3	91°	-17.3	-23.6		1861.6		+990	+17	755,129	1,630,315
428	1320		"	"	7.7	91°	-23.0	-30.7		1854.5		+1320	+22	755,459	1,630,320
429	1650		"	"	8.4	91°	-28.8	-37.2		1848.0		+1650	+28	755,789	1,630,326
430	1980		"	"	9.1	91°	-34.6	-43.7		1841.5		+1980	+33	756,119	1,630,331
431	2310		"	"	7.0	91°	-40.3	-47.3		1837.9		+2310	+39	756,449	1,630,337
432	2640		"	"	3.0	91°	-46.1	-49.1		1836.1		+2640	+44	756,779	1,630,342
433	2920		350° 48.8'	+10°	2.9	91°	-51.0	-53.9		1831.3		+2920	+41	757,059	1,630,339
433	2970		350° 57.4'	+10°	3.3	91°	-51.8	-55.1		1830.1	TP	+2970-3	+50+3	757,106	1,630,351
433	2970				11.9	90°50'	-43.2	-55.1			TP				
	2310		170° 35.2' +180°	+10°	+8.3	89°	-40.3	-32.0	1798.1		BS	+2310-3	+24+3		
	2310				+1.6	89°10'	-33.6	-32.0			BS				
434															
434	1980		170° 35.2'	+10°	9.5	89°	+34.6	+25.1		1823.2		-1980	-20	757,433	1,630,358
435	1650		"	"	10.2	89°	+28.8	+18.6		1816.7		-1650	-17	757,763	1,630,361
436	1320		"	"	9.5	89°	+23.0	+13.5		1811.6		-1320	-14	758,093	1,630,364
437	990		"	"	11.1	89°	+17.3	+6.2		1804.3		-990	-10	758,423	1,630,368
438	660		"	"	3.0	—	—	-3.0		1795.1		-660	-7	758,753	1,630,371
439	330		"	"	6.6	—	—	-6.0		1792.1		-330	-3	759,083	1,630,375
440	0		"	"	5.4	—	—	-5.4		1792.7	TP	0	0	759,413	1,630,378
441	330		501° 2.9'	+10°	0.2	—	—	-0.2		1797.9		+330	+4	759,743	1,630,384

Bridge

757080 + 1,630,370
9422

SURVEY NOTES-HIGH RESOLUTION DATA

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Geosource Inc.

DATE		INSTRUMENT MAN		ROD MAN		PARTY NUMBER		NOTES CHECKED BY		LINE NO.	PAGE						
10/2/80		GLITZINGER		G COTCAMP		6834		SAL		2-A	31 of 31						
AREA		TOPO MAP		STATE	COUNTY		TWP	RANGE	PPM	PARTY MANAGER							
OKLAHOMA II		DILL CITY		OKLAHOMA	WASHITA					DRAVIS							
STATION NO.	SLOPE DISTANCE	PLOTTING DISTANCE	AZIMUTH FROM MAGNETIC NORTH	DEC	ROD READING	VERTICAL ANGLE	VERTICAL CHANGE	DIFFERENCE IN ELEVATION	ELEVATION OF INSTRUMENT	ELEVATION OF STATION	BS X TP	NORTH + SOUTH -	EAST + WEST -	COORDINATES		REMARKS	
												LAT.	DEP.	Y	X		
									1798.1								
442	660		351° 2.9'	+10°	8.7	89°	+11.5	+28		1800.9		+460	+12	760,073	1,630,390		
443	990		"	"	14.1	89°	+17.3	+3.2		1801.3		+990	+18	760,403	1,630,396		
444	1320		"	"	8.7	89°30'	+11.5	+2.8		1800.9		+1320	+24	760,733	1,630,902		
445	1650		"	"	12.7	89°30'	+14.4	+1.7		1799.8		+1650	+30	761,063	1,630,908		
446	1980		"	"	13.4	89°34'	+15.0	+1.6		1799.7		+1980	+34	761,393	1,630,414		
#	2198		350° 53.3'	+10°	14.5	89°34'	+16.6	+2.1		1800.2		+2198	+34	761,611	1,630,912	4 way intersect.	
447	2310		351° 2.9'	+10°	12.1	89°36'	+16.1	+4.0	4.3	1802.4	TP	+2310 -3	+42 +3	761,720	1,630,923	EOL #2-A	
447	2310				14.3	89°32'	+18.8	+4.5			TP						
	1650		357.83' -190°	+10°	+3.5	-		+3.5	1805.9		BS	-1650 -3	-29 +3			vertical + horizontal	
	1650				+11.7	TH	-8.3	+3.4			BS					traverse from sta.	
π	0				5.4	-		-5.4		1800.5	π	0	0	760,067	1,630,397	447 south to B.M.	
	1320		171° 36.5'	+10°	11.0	-		-11.0		1799.9	TP	-1319 -3	-37 +3	758,745	1,630,363		
	1320				4.5	BH	-6.6	-11.1			TP						
	987		349° 54.9' -190°	+10°	+7.4	91°	+17.2	+26.6	1821.5		BS	-987 -4	+1 +3				
	987				+6.8	91°10'	+20.1	+26.6			BS					horiz. correct. y=-19, x=+18	
	0				5.4	-		-5.4		1816.1	π	0	0	757,754	1,630,367		
BM	454		167° 41.9'	+10°	1.7	89°10'	+6.6	+4.9				-454	+18 +3	757,300	1,630,385	757,300 + 1,630,385 U.S.G.S. 28KW1956	
BM	454				4.4	88°58'	+9.2	+4.8		1826.3						el. 1827.	